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PEI: September 1983

A3: April 1985

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Kendrew Report in Golder at Pear

# ▶ PART 3 ends:-

mr Toy (Ford) to PM 28.6.85

PART 4 begins:-

MEA & HMT 1.7.85.











TMENT TO BY.
THE QUEEN MOTHER H.R.H.T.
MATOR YE
MANUFACTURERS MOTOR YE
MPANY LIMITED FORD MO
DO ESSEX BR

### **Ford Motor Company Limited**

Sam Toy Chairman and Managing Director Brentwood Essex CM13 3BW England

June 28, 1985

The Rt Hon Margaret Thatcher, MP The Prime Minister 10 Downing Street Whitehall, SW1

MER

Dear Madam

In Mr Toy's absence from the office at present, I wish to acknowledge and thank you for your letter of June 26, 1985, which will, of course, be shown to him on his return.

Yours faithfully

B.m. Stock

Secretary to Sam Toy

bms

VC



THE PRIME MINISTER

26 June 1985

Vear h. Toy

Thank you for your letter of 21 May about the Engineering and Technology programme and related matters.

I was pleased to learn how much your company is already doing to assist the work of higher education institutions in engineering and technology subjects and I am very grateful for your promises of additional assistance. That kind of support from you and your colleagues in industry is vital to the success of this programme.

I was particularly interested in your supportive comments about the role of the polytechnics in contributing to the national effort to produce the engineers and technologists which the country so urgently requires. We shall be including selected polytechnics, with good academic records and strong industrial links, in the second phase of the programme. We shall in particular be looking for strong polytechnic bids which complement the subject areas covered by other institutions in this programme. For example, we want to ensure, so far as possible, that this programme should include a significant number of production (including systems) engineering courses, to which you attached particular importance. We therefore hope to receive some strong polytechnic bids in this area.

The universities also of course have a crucial role within this programme in securing additional graduate output

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of the highest quality. We are committing programme funds to selected university courses only where we are confident, on the basis of advice from industry, that such courses will produce additional engineers and technologists of genuine value to employers.

I absolutely agree with you on the importance of "attitudes" to this whole question. Parents' attitudes are, of course, important in all this and the Government is striving to get the right message across. But there is more to be done, not only by the Government but also by industry itself. It is vital that young people (and of course their parents) should think of a career as a graduate engineer or technologist to be as attractive in terms of recognition, rewards and career prospects as other opportunities open to able young people within industry and commerce. As long as other professions, for example accountancy and merchant banking, are seen to lead to better rewarded careers and to higher status our efforts in this direction can have only partial success. I know that many in the engineering industry realise this and are doing everything they can to spread this message.

On the Youth Training Scheme, like you, I was appalled by the recent half day walk out by school children protesting at what the organisers of the action, the Youth Trade Union Rights Campaign, claimed were Government plans to make the Scheme compulsory. This sort of politically motivated action does nothing to help youngsters gain the skills and experience they will need in tomorrow's labour market and shows just how little the extreme left wing of the trade union movement really cares about the future of our young people.

As you say, the Youth Training Scheme plays a very valuable role in helping young people negotiate the difficult transition from school to work. Department of Employment Ministers and I miss no opportunity to promote it and to explain its benefits and advantages to employers and

youngsters whenever and wherever we can. It is vital to our country's future as a major trading nation that we have a well trained, well motivated work force.

I know that Tom King is very keen to discuss the Youth Training Scheme with you and I understand that his office is now in touch with yours to arrange a date.

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Sam Toy, Esq.



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Secretary of State for Trade and Industry

Prime Minite (4) ccy6

For information, pages 2 576

DEPARTMENT OF TRADE AND INDUSTRY

1-19 VICTORIA STREET

LONDON SWIH OET

TELEPHONE DIRECT LINE 01-215 5422 SWITCHBOARD 01-215 7877

24 June 1985

Mark Addison Esq Private Secretary to the Prime Minister 10 Downing Street London SW1

ma

Dear Mark

Thank you for copying to us your note of the Prime Minister's meeting with industrialists on 21 May.

On page 6 of that minute the Prime Minister is quoted as saying that

"The Government have already done a great deal, however, and nearly every school, including primary schools, now had a micro computer".

The Prime Minister may be interested to hear of our latest assessment of the extent of use of micro-computers in schools.

We now estimate the number of micros in secondary schools at an average of about 11. This is based on a projection of the last reliable figure from a survey in early 1984 which gave an average of 8.6. In primary schools, the average in early 1984 was 1.2 when the Government scheme of support under which primary schools were given a grant towards half the price of a micro was only half way through. We would expect the primary school average, therefore, to be now about 2. In our own briefing, we also no longer feel constrained about saying that every secondary and primary school has a computer rather than "nearly every school". We cannot be entirely sure that every single school in the country took advantage of the various Government offers but we are not aware of any schools which did not. It has to be recognised, however, that the vast majority of the additional micros have been bought, as had always been intended, within the education system as the DTI support has been limited to only half a micro per school plus related equipment.



I should also mention that this considerable increase in the use of micros has been supported through the Microelectronics Education Programme of the DES which is estimated to have provided training for some 80,000 teachers as well as producing about 1,400 programmes of educational software. This is mirrored, though the figures are somewhat smaller, by the work of the Scottish Microelectronics Development Programme in Scotland. The combined effect of these programmes suggest that we are still ahead of our competitors in this particular area and no other country, to the best of our knowledge, has yet managed to introduce computers to all schools.

Copies of this letter go to Elizabeth Hodkinson at DES and to Andrew Rinning (Scottish Office).

EDWARD BLADES
Private Secretary

Science + Tech: Budget #3.





DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE YORK ROAD LONDON SEI 7PH TELEPHONE 01-934 9000

FROM THE SECRETARY OF STATE

Andrew Turnbull Esq Private Secretary 10 Downing Street London SW1

24 June 1985

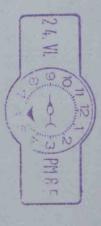
Dear Andrew.

Cutt MEA? My Secretary of State minuted the Prime Minister on 18 June, with copies to Cabinet colleagues, concerning the publication of the Kendrew Report on future UK participation in high energy particle physics research and, inter alia, on continued membership of the European Organisation for Nuclear Research - CERN. I now enclose a copy of the report.

The publication of the report has attracted some press comment and TV coverage, and Sir John Kendrew discussed the report with the Parliamentary and Scientific Committee at its meeting on 18 June.

MISS C E HODKINSON Private Secretary

Budget: SCI & Tech. 1+3.





## DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE YORK ROAD LONDON SEI 7PH TELEPHONE 01-934 9000

FROM THE SECRETARY OF STATE

Mark Addison Esq Private Secretary 10 Downing Street London SW1

21 June 1985

Dear Mach,

You asked for a further draft of a reply for the Prime Minister to send to Mr Sam Toy of the Ford Motor Company. I attach same.

I M HUGHES

Private Secretary

career as a graduate engineer or technologist to be as attractive in terms of rewards and career prospects as other opportunities open to able young people within industry and commerce. As long as other professions, for example accountancy and merchant banking, are seen to lead to better rewarded careers our efforts in this direction can have only partial success. I know that many in the engineering industry realise this and are striving to get the message across.

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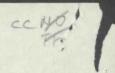
Prine Minister, 1 Sis Robin Nicholson rote atteted indicates his support of the repets corchisins that spend or his exusy policie shyains should be reduced. No active required for now, stoy an original discussion may be readed in due course. PRIME MINISTER I wrote to colleagues in March 1984 about a review of the UK's participation in high energy particle physics which had been set up jointly by the Advisory Board for the Research Council (ABRC) and the Science and Engineering Research Council (SERC). The terms of reference of the review were: i. To review UK participation in the study of high energy particle physics, with particular reference to that necessarily carried out under international auspices; To consider possible future involvement, the role and extent of international collaboration, and the implications of re-allocation of the resources in whole or in part to other areas of science; iii To report to the Chairman of the ABRC and the Chairman of the SERC. The Review Group's report is being published today by the ABRC and SERC. A short summary is attached to this letter. I shall be announcing publication to Parliament through an inspired Parliamentary Question; the Chairman of the Review Group, Sir John Kendrew FRS, President of St John's College Oxford will then be holding a Press Conference. 3. As the review is commissioned by the ABRC and SERC the report is addressed to these bodies, not to the Government. The Chairmen of ABRC and SERC have taken delivery of the report and will be considering what advice to offer me on the recommendations. I expect to receive their advice later this year, probably not before the Autumn. 4. There is thus no immediate action for the Government. I thought however that you and colleagues should know the gist of the Review Group's recommendations since they are likely to give rise to adverse comment both at home and abroad. At home, in addition to the predictable out-cry from particle physicists, there is likely to be more general criticism of the Government for apparently forcing such unpalatable choices on scientific communities. 5. Abroad, there will naturally be some consternation in CERN itself. And while there is reason to believe that some of our fellow member states will privately welcome the call for CERN's current level of expenditure to be cut back, their public posture may well be critical. More seriously they may take the threat of a considerable reduction in British support for CERN as a fresh sign of our unreliability as a partner in international scientific ventures. The decisions we take on Kendrew could therefore

be crucial in determining the extent which British scientists can in future participate in international scientific endeavours. More immediately, the message from the Kendrew report may cause complications to our present endeavours to secure French and German collaboration in the new UK Spallation Neutron Source in exchange for British membership of the proposed European Synchrotron Radiation Facility (ESRF) on terms we can afford. 6. In an attempt to prevent our international partners overreacting at this stage, I am writing to the Science Ministers 2 of the other 12 member states concerned making clear that the review was commissioned independently of the UK Government; that we await further advice on its recommendations and that should this favour a change in our relationship with CERN, any decision would only be taken after close consultation with fellow members. The FCO has also briefed posts along these lines. 7. Copies of this minute go to Members of the Cabinet and to Sir Robin Nicholson. 18 June 1985 Department of Education and Science

## SUMMARY OF THE KENDREW REPORT

- 1. The review group has concluded that although particle physics is a subject that is worth pursuing in the longer term, with the present resources available for science in the UK and taking into account other areas of research that are unfunded or having to be forgone, the current level of expenditure on the subject cannot be justified and should be reduced as soon as possible.
- 2. The group therefore recommends that the UK should remain a Member State of CERN on the present basis until the end of the construction of the Large Electron Positron collider (i.e. until 1989), but that it should continue its membership beyond that time if this can be achieved at significantly lower costs. The suggested reductions are 5% in 1988/89 rising to 25% in 1991/92. Similarly, progressive reduction are recommended in the domestic expenditure rising to 25% in 1990/91. The total savings that could be achieved amount to a total of over £40M over the six years 1986/87 to 1991/92.
- 3. The report stresses that even the final 25% saving (about £14M per annum) would not in itself solve the financial problems of other areas of science, but it balances the advantages of continued effective research in particle physics and at least making a partial contribution to the needs of other areas of science. In the short term additional funds are urgently needed, at least until the full savings from particle physics can be achieved, but in the longer term the strength of the case for increased funding would depend on how well the science community could show that it had made the most efficient use of the available funds.

Science: Budget; Pt 3 



W0471

THE PRIME MINISTER

18 June 1985

#### REVIEW OF HIGH ENERGY PARTICLE PHYSICS

The Secretary of State for Education and Science has written to you about the review, chaired by Sir John Kendrew, of UK participation in the the study of high-energy particle physics. I believe that the issues - in particular UK membership of the European Organisation for Nuclear Research (CERN) at Geneva - are important, are likely to be controversial, and may have wider implications for UK science both at home and in international collaboration.

- 2. I agree with the Secretary of State that the recommendations of the Report are likely to attract considerable comment, much of it hostile, both at home and in other Member States of CERN. However, I believe that the Governments of most Member States will privately welcome both the review of CERN and the recommendation for a reduction in its expenditure.
- 3. The summary of the report provided by DES omits the important conclusions that expenditure on particle physics is too high irrespective of the current financial problems of the Research Councils and that their recommendation of a reduction in spend on particle physics would stand even if the Science Vote were to be increased.
- 4. I support the Secretary of State's proposals for handling, though in view of the strong interest in the UK's membership of CERN by other Departments, in particular the Foreign and Commonwealth Office and the Treasury, you may wish to keep open the option of a collective consideration by Ministers of the advice from SERC and ABRC to the Secretary of State for Education and Science, perhaps in the forum of OD(E).

- 5. I am concerned, however, at the projected timetable. If the Secretary of State does not receive advice from SERC and the ABRC until the autumn, the ensuing uncertainties will cause problems for the bilateral discussions of the current PES round. As a member of ABRC, I am pushing for the process to be speeded up.
- 6. I am copying this minute to Sir Robert Armstrong.

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ROBIN NICHOLSON

L 18/6 Science & Tech Pt3 Budget.

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The Jo Thank you for your letter of 21 May about the Engineering and Technology programme and related matters. am glad you share my feeling that we had a very useful meeting. I was pleased to learn how much your company is already doing to help the work of higher education institutions in engineering and technology subjects and I am very grateful for your promises of additional assistance. That kind of support from industry is vital to the success of this programme. The government agrees that the polytechnics can make a valuable contribution to the production of engineers and technologists which industry and the nation so urgently require. We have therefore announced that there will be scope for including selected polytechnics in the second phase of the Engineering and Technology programme. We do, however, also see a most important role for creating additional graduate output from universities in this programme in line with much of the advice we have received on this programme from industry and others.

I am looking forward to our follow-up meeting next year, which my office will be arranging in due course, when we can assess the progress which has been made.

I know that Tom King will be responding separately to your comments on the YTS. I certainly share your views on the importance of the scheme and I know that Tom is as concerned as you are about the way in which some have been misrepresenting it.

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#### LETTER FROM SAM TOY - CONTRIBUTION TO PM's REPLY

MANY DES

On de 771,

Like you I was appalled by the recent half day walk out by school children protesting at what the organisers of the action, the Youth Trade Union Rights Campaign, claimed were Government plans to make the Youth Training Scheme compulsory. This sort of politically motivated act does nothing to help youngsters gain the skills and experience they will need in tomorrow's labour market and shows just how little the extreme left wing of the trade union movement really cares about the future of our young people.

As you say, the Youth Training Scheme plays a very valuable role in helping young people negotiate the difficult transition from school to work. Department of Employment Ministers and I miss no opportunity to promote it and to explain its benefits and advantages to employers and youngsters whenever and wherever we can. It is vital to our country's future as a major trading nation that we have a well trained, well motivated work force.

I know that Tom King is very keen to discuss the Youth Training Scheme with you and I understand that his office is now in touch with yours to arrange a date. Second Se

THE PRIME MINISTER

14 June 1985

Vear Th. Swistead.

Thank you for your letter of 22 May. I am pleased that you were encouraged by our meeting. I have noted carefully what your Company is already doing to assist higher education in aspects of engineering and technology and am glad that you will now be providing increased assistance.

You mention the need for "modification of both school and university curricula". As I said at the meeting, the Government is acting on a number of fronts. In the schools, our policies are designed to create a stronger emphasis on mathematics and science. In higher education, the Engineering and Technology programme is the latest in a series of initiatives to increase the output of graduates in these subjects.

I certainly agree with you about the need for more graduates in software engineering and design, and we shall be ensuring that a balance is struck in the Engineering and Technology programme between this and the other important areas within its scope.

Yours simely Nargant Shallte



#### DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE YORK ROAD LONDON SE1 7PH
TELEPHONE 01-934 9000

FROM THE SECRETARY OF STATE

Mark Addison Esq Private Secretary 10 Downing Street London SW1 drank

// June 1985

Dear Mach,

Thank you for your letter of 28 May enclosing this letter to the Prime Minister from the Chairman of Systems Designers International.

I enclose a draft reply for the Prime Minister's signature.

I M HUGHES

Private Secretary

JPMU/D

SPWACO

#### DRAFT REPLY TO MR P SWINSTEAD

Thank you for your letter of May 22. I am pleased that you were encouraged by the meeting on May 21 - as indeed we were. I note what your Company is already doing to assist higher education in aspects of engineering and technology and am glad that you will now be providing increased assistance.

You mention the need for "modification of both school and university curricula". As I said at the meeting, the Government is acting on a number of fronts. In the schools, our policies are designed to create a stronger emphasis on mathematics and science. In higher education, the Engineering and Technology programme is the latest in a series of initiatives to increase the output of graduates in these subjects.

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I agree with you about the need for more graduates in software engineering and design, and we shall be ensuring that a due balance is struck in the Engineering and Technology programme between this and other important areas within its scope.

10 DOWNING STREET 10 June 1985 THE PRIME MINISTER

1/ear Si William

Thank you for your letter of 7 May about the recently announced Engineering and Technology programme.

I am sorry you were unable to come to what I think proved to be a very useful meeting on 21 May. It was good of you to write setting out your views and explaining the action BICC proposes to take. I am particularly glad that BICC, like other companies represented at the meeting, will be providing additional assistance to institutions benefiting from the programme.

I was interested in the other points in your letter and am pleased to be able to tell you that we have now decided that there should be some provision for selected polytechnics in the second phase of this programme. In line with the objectives for the programme as a whole, this provision will be mainly at undergraduate level, though it is possible that there will be some postgraduate (including "conversion") courses at selected polytechnics included in the programme.

I am looking forward to our follow-up meeting next year, which my office will be arranging in due course, when we can assess the progress which has been made.

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I know that this file is to be brought forward on 6 January to enable a further 'Switch' meeting, with the industrialists, to be set up. I think if we are to arrange this follow-up meeting for early next year, we shall need to set in hand the arrangements rather earlier. I should, therefore, be grateful if it could be brought forward to me early in december.

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MaliAddoon

(Mark Addison)
6 June 1985

BG3A02 Demapa CF PPS DEPARTMENT OF EDUCATION AND SCIENCE ELIZABETH HOUSE YORK ROAD LONDON SEI 7PH TELEPHONE 01-934 9000 FROM THE SECRETARY OF STATE Mark Addison Esq Private Secretary 10 Downing Street LONDON SW1 5 June 1985 Dear Mach, You asked for a draft reply for the Prime Minister to the letter of 15 May from David Baldwin, managing director of Hewlett-Packard. The Prime Minister may wish to reply as follows. "Thank you for your letter of May 15. I was pleased to see from this how much Hewlett Packard has already begun to contribute to engineering and technology departments in universities and polytechnics. At the meeting I had with you and your colleagues from industry last week, I explained that the Government had allocated a substantial sum to this programme - at a time of general restraint in public expenditure - and that we were consequently pleased to learn that industrialists were likewise prepared to find the resources to provide additional assistance to the institutions to be funded under this programme Such further concrete assistance from industry will be critical to the success of the programme. As you say, many firms, such as your own, already contribute splendidly for higher education. But, if we are to expand training places as we intend and the public funding for which we have already announced, we do need assistance - whether through donation of equipment, help with the design of courses, loaning of staff as visiting lecturers, sandwich placements, sponsored studentships, or other means. After all, the success of this programme is so important to industry itself and to the nation." IAN HUGHES Lith. Private Secretary



#### DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE YORK ROAD LONDON SEI 7PH TELEPHONE 01-934 9000

FROM THE SECRETARY OF STATE

Mark Addison Esq Private Secretary 10 Downing Street LONDON SW1

5 June 1985

Dear Mach.

You asked for a draft reply for the Prime Minister to the letter of 15 May from David Baldwin, managing director of Hewlett-Packard. The Prime Minister may wish to reply as follows.

"Thank you for your letter of May 15. I was pleased to see from this how much Hewlett Packard has already begun to contribute to engineering and technology departments in universities and polytechnics.

At the meeting I had with you and your colleagues from industry last week, I explained that the Government had allocated a substantial sum to this programme - at a time of general restraint in public expenditure - and that we were consequently pleased to learn that industrialists were likewise prepared to find the resources to provide additional assistance to the institutions to be funded under this programme. Such further concrete assistance from industry will be critical to the success of the programme.

As you say, many firms, such as your own, already contribute splendidly for higher education. But, if we are to expand training places as we intend and the public funding for which we have already announced, we do need assistance—whether through donation of equipment, help with the design of courses, loaning of staff as visiting lecturers, sandwich placements, sponsored studentships, or other means. After all, the success of this programme is so important to industry itself and to the nation."

IAN HUGHES Private Secretary 50

HEWLETT-PACKARD LIMITED

NINÉ MILE RIDE, WOKINGHAM, BERKSHIRE, RG11 3LL Tel. (0344) 773100 Telex 848805

David A. Baldwin Managing Director

The Rt Hon Margaret Thatcher MP
The Prime Minister
10 Downing Street
London SW1

Wear Prime Minister,

My purpose in writing to you prior to the meeting on the 21st May is to provide you with a synopsis on Hewlett-Packard's position and a summary of our responses to the various points raised in your letter.

As you may know, Hewlett-Packard has been extremely active in the debate surrounding the IT Skills Shortage issue in the United Kingdom. I am particularly pleased that the Government has responded to the various representations in such a positive manner and look forward to actively participating in the discussions relating to this new initiative.

Our position can be summarized thus:-

The IT Skills Shortage issue is of major concern since it directly impacts upon current and future international competitiveness of Britain across both the industrial and commercial sectors of the economy.

There is a clear and proven need to increase the output of graduate engineers and technologists from both Universities and Polytechnics. In addition, because of the all pervasive nature of IT, the UK must address the problem of educating society to the applications of IT, ranging from continuing to emphasise the computer literacy of children at school, to establishing retraining programmes for workers in the more mature industries.

In view of the gravity of the situation and in order to achieve significant progress, we believe that a national consensus is required which could be focussed through a Cabinet level appointment. This post would be the position from which IT initiatives could be co-ordinated so that excessive fragmentation can be avoided.

To address the particular points raised in your letter of the 19th March, we are pleased to present the following information:-

(i) We at Hewlett-Packard believe we can make the most effective contribution in the area of IT education by assisting Universities and Polytechnics through donations of equipment.

I am pleased to announce that Hewlett-Packard Limited will be donating 1.5M worth of advanced measurement and computation equipment commencing later this year. This represents a substantial increase over last year, and, consistent with continuing growth in our activities, we hope to maintain this level in succeeding years.

This equipment will be donated to Universities and Polytechnics which we believe will result in an increase in both output and quality of engineers and technologists.

- (ii) We already have an active programme of help to teaching staff established at a number of Universities and Polytechnics where our employees lecture. We also provide funding for lectureships, and encourage the interaction of University and Polytechnic staff with industry through consultancy arrangements
- iii) Our current programme for sandwich courses and industrial placements accommodates 120 students and is anticipated to grow substantially over the next three years.
- (iv) We currently act as course design consultants to a number of higher educational establishments. In addition, we have designed a 4-month conversion course for engineers to become software designers. We are making this course available to higher education establishments in this country.
- (v) We will continue to offer worthwhile careers to graduates and our present plans are to recruit 1000 graduates over the next three years a large percentage of these will come direct from Universities and Polytechnics.

With reference to the questions raised in your letter, we offer the following observations:-

(a) It is our experience that graduates from University and Polytechnic courses are equally suited to our needs but the real issue is the quality of the particular department.

We draw applicants from all disciplines in pure and applied sciences. It is in these areas that we anticipate a shortfall and we strongly emphasise the need for either more investment in science and engineering related subjects or for a more substantial switch from the arts and social sciences.

- (b) The question of organisation of co-operative links between government/academia/industry is fundamental to the UK's ability to tackle the broad problem of industrial competitiveness. That is why our recommendation of a new Cabinet level position is, in our opinion, essential.
- (c) It is our belief that the career choice of pupils is moulded by a complex interaction of attitudes of parents, teachers and society. This leads us to conclude that the Government has the primary role to play supported by business. We already have involvement with careers teachers, we work with schools in giving career guidance lectures and over the last few years have noted a significant increase in the interest in science and technology subjects. Regrettably, their new-found interest is currently often frustrated by the lack of course places.

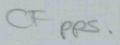
Ultimately, expectations have to be fulfilled through recognition in terms of status and salary. Herein lies the case for differential rewards for teachers and lecturers in science related subjects, consistent with an improvement in the status and rewards for the entire science and engineering community.

We hope you find this synopsis of Hewlett-Packard's response to the points raised in your letter useful and proof of our commitment to be supportive of your initiative.

I look forward to meeting you and your colleagues next Tuesday.

Science + Teet Budget ... 





#### DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE YORK ROAD LONDON SEI 7PH TELEPHONE 01-934 9000

FROM THE SECRETARY OF STATE

Mark Addison Esq Private Secretary 10 Downing Street London SW1

**5** June 1985

ather

Dear Mach,

I am replying to your letters of 10 May, concerning Sir William Barlow's letter to the Prime Minister, and 23 May, concerning Mr Sam Toy's letter, both relating to the 'Switch'.

I attach draft replies for the Prime Minister's signature.

Yours ever,

I M HUGHES
Private Secretary

la Hyls

P. Swinster Description

10 DOWNING STREET

From the Private Secretary

Ack 28 May 1985

I enclose a copy of a letter which the Prime Minister has received from the Chairman of Systems Designers International plc.

I should be grateful if you would let me have a draft reply to Mr. Swinstead, for the Prime Minister's signature, to reach this office by Tuesday 11 June.

I am copying this letter and enclosure to Andrew Lansley (Department of Trade and Industry), Chris Snell (Department of Employment), Leigh Lewis (Minister without Portfolio's Office) and to Sir Robin Nicholson (Cabinet Office).

Mark Addison

Miss Elizabeth Hodkinson, Department of Education and Science.

Prize Munit (b)

SYSTEMS DESIGNERS INTERNATIONAL PLC

Pembroke House, Pembroke Broadway, Camberley, Surrey GU15 3XD, England Telephone Camberley 686200. Telex 858280, Telecopier Camberley 683511

The Prime Minister, 10 Downing Street, London. mr.

22nd May 1985.

Den Prine Miniter,

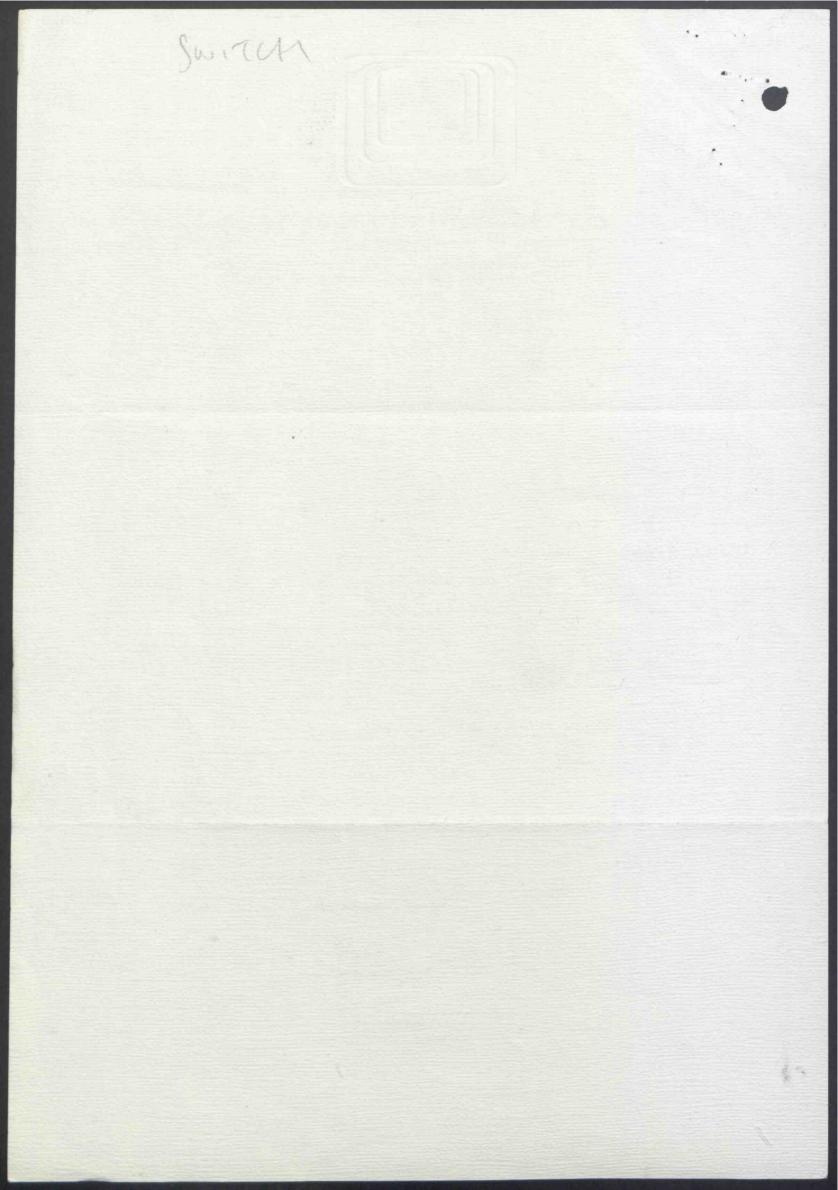
I was most encouraged by yesterday's meeting, and assure you of my company's continued support for the reform of our educational system with industry participation. We have increased our level of graduate intake every year as we have expanded, and have a significant external sponsorship budget spent with universities and local schools. The need for modification of both school and university curricula and the required change of emphasis towards the sciences was clearly expressed at the meeting.

This country is a world leader in the software field, and I believe that it is in this area that more graduates are required if we are to maintain our lead. The Alvey project is vital to this cause and this initiative must be continued and extended into the future.

My company is becoming an important international player in this field, and as we expand further we shall be both supporting your policy for industrial involvement in IT education and creating increasing numbers of jobs for IT graduates.

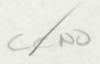
Philip Swinstead,

Chairman.



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#### DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE YORK ROAD LONDON SEI 7PH TELEPHONE 01-934 9000

FROM THE SECRETARY OF STATE

The Rt Hon Norman Tebbit MP
The Secretary of State for Trade and Industry
1-19 Victoria Street
LONDON SW1

Z8 May 1985

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Dean Nomen.

# ENGINEERING AND TECHNOLOGY PROGRAMME

When I wrote to you on 14 May about the action I proposed to take following my meeting with Sir Robert Clayton and representatives of the IT Skills Agency, I promised to clear the terms of an announcement about the public sector with you and other colleagues, assuming general agreement with the action I then proposed.

Now that colleagues have concurred with my proposals, I would like to move ahead with the low key announcement I envisaged in my letter. A draft Parliamentary Question and Answer is attached for this purpose. To expedite progress in considering bids from the public sector. I believe this should issue immediately after the Whitsun recess. Accordingly I would ask if any comments on the answer could reach me not later than 4 p.m. on Thursday 30 May.

Copies of this letter go to the Prime Minister, Chancellor of the Exchequer, Secretaries of State for Defence, Employment, Scotland and Wales, the Minister without Portfolio, the Chief Secretary to the Treasury, Sir Robert Armstrong and Sir Robin Nicholson.

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ENGINEERING AND TECHNOLOGY PROGRAMME: INCLUSION OF THE PUBLIC SECTOR

## Question

To ask the Secretary of State for Education and Science whether he plans to include any public sector institutions of higher education in the Engineering and Technology Programme announced on March 19.

### Answer.

In the light of further advice from representatives of industry, my Rt Hon Friend the Secretary of State for Wales and I have invited the National Advisory Body for Public Sector Higher Education, in association with the Wales Advisory Body, to offer advice on institutions of particular strength in this area to which resources under the second phase of this Programme might be allocated. As in the first phase of the Programme, industrial commitment to institutions will be an important criterion for inclusion in the programme.

Science + Tean PT3
Broger



# 10 DOWNING STREET

THE PRIME MINISTER

24 May 1985

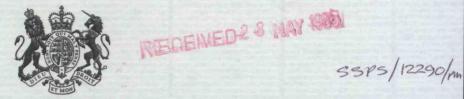
Year Lord Sandon.

Many thanks for your letter of 21 May. I agree with you that we need to encourage a positive approach to training, both among employers and employees, if we are to develop the skills we need. A key to this, as we agreed at our meeting, is ensuring engineering and industry generally should be seen to offer valuable and worthwhile careers. As you rightly say, this is something all of us - schools, polytechnics, universities, Government and industry itself - must work at.

I am looking forward to our further meeting early next year when we can assess the progress which has been made.

> Cours sinuely Margaret Shallter

The Viscount Sandon, T.D.



# 10 DOWNING STREET

From the Private Secretary

23 May 1985

Dea Elizabet

I enclose a letter we have received from Mr. Sam Toy of the Ford Motor Company Limited, following the meeting the Prime Minister held on the Switch.

I should be grateful for your advice and for a draft reply for the Prime Minister's signature by Wednesday 5 June.

I am sending a copy of this letter to Chris Snell (Department of Employment) whom you will wish to consult in your draft reply. Copies also go to Andrew Lansley (Department of Trade and Industry), Leigh Lewis (Minister without Portfolio's Office), John Graham (Scottish Office) and to Sir Robin Nicholson.

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Mark Addison

1. Secs Clerks
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please-to
2. Mr ritzerna

Miss E Hodkinson
Department of Education and Science. DE would like the following

pargraph included in our response:

"I know that Tom King will be responding

separately to your comments on the YTS. I share

your views on the importance of the Scheare and

I know that Tom is as concerned as you are about the

way in which some have been resoriepercenting it." It 18/5



Ack 23/5

# 10 DOWNING STREET

From the Private Secretary

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Mark Addison

Miss E Hodkinson Department of Education and Science.



23 May 1985

I enclose a letter the Prime Minister has received from Mr D H Roberts of the General Electric Company plc, following her meeting on the Switch.

I should be grateful for your advice as to whether or not a simple acknowledgment will suffice.

Copies of this letter go to Chris Snell (Department of Employment), Andrew Lansley (Department of Trade and Industry), Leigh Lewis (Office of the Minister without Portfolio), John Graham (Scottish Office) and Robin Nicholson (Cabinet Office).

(Mark Addison)

Miss E. Hodkinson, Department of Education and Science



From the Private Secretary



# 10 DOWNING STREET

MJOANI be John Liggius (CO) P. Warry (Bl. Unit) Nick Powers (Press office)

22 May 1985

From the Private Secretary

Der Elizabet

I attach a note of yesterday's meeting with industrialists.

Also attached is a copy of a letter from Viscount Sandon, which we have acknowledged. You will have seen the letter from Mr Messervy (copy attached to those who have not already had one), and I should be grateful for a draft reply for the Prime Minister to sign, by Monday 3 June.

I am copying this letter to the Private Secretaries to the Secretaries of State for Energy, Scotland, Wales, Employment, Trade and Industry, Minister without Portfolio, Parliamentary Under Secretary of State for Industry and to Sir Robin Nicholson.

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Mark Addison

PS. Also attached in the work I'm Fromis Tomass pomed awars after the meety.

Miss Elizabeth Hodkinson Department of Education and Science.

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## MEETING WITH INDUSTRIALISTS ON 21 MAY 1985

A list of those attending is attached.

The <u>Prime Minister</u> opened the meeting by welcoming the industrialists and thanking them for coming to discuss their role in the Switch programme.

The Prime Minister accepted that industry was already making a major contribution to vocational and technical education, but more needed to be done if our science base was to be safeguarded and technological progress flourish. The Government had re-allocated £43 million for this purpose. Industry had now to take a more active role in course design, the provision of equipment, the release of staff, the sponsoring of students, and the provision of sandwich course placements.

Sir Francis Tombs (Rolls Royce, Chairman of Engineering Council) welcomed the opportunity to discuss with the Prime Minister industry's role in the development of technical and vocational higher education. He had already held a meeting with the industrialists represented at the meeting. The 22 companies involved would employ 8,100 new graduates this year; sponsored 3,250 students; provided 3,500 vacation places; sponsored £9 million research in universities and were giving them £6 million worth of equipment; in addition they would spend £1.6 million supporting university staff, and provide 436 visiting lecturers. This was an impressive record, though industry could and should do more.

It was important that the £43 million should not be spread too thinly but should be used selectively to achieve the maximum impact. The companies had identified areas where they could contribute more; in equipment, with teaching staff, with sandwich course placements, with course design. Overall, the companies warmly supported the Government's concern to redirect resources towards engineering and technological courses.

Mr. Alun Jones (Ferranti) had doubts about the value of his company committing extra resources on training. There was a good chance the investment would be lost as the trainees were productive links between universities and industry were to be forged at local level. Finally if polytechnic courses were to be expanded too far, shortage of suitable candidates willing

Mr. Laister (Thorn) thought that polytechnics were generally more responsive to the needs of industry. There were broadly three ways of allocating the extra resources for technological education: increasing the numbers taking specific engineering and technological courses; incorporating elements of mathematics and technology into a wider range of courses, including arts courses; and providing more equipment. He believed the second route was a cost-effective one, and should not be overlooked.

Mr. Baldwin (Hewlett Packard) believed the discussion of industry's needs in this area still lacked a proper focus. The Butcher Committee had helped. But information technology was an all-embracing issue affecting industry generally. More needed to be done and faster in order to improve UK competitiveness; Japan was much more effective in applying new technologies throughout industry.

Sir John Clark (Plessey) said he thought that consideration needed to be given to the possibility of directing the universities as to which courses they ought to support. Moreover, the shape of university entrance requirements

from the meeting. First, there were the immediate shortages in the information technology area. The CBI had set up the Information Technology Skills Agency to tackle this problem. Secondly, there was the medium-term question of the contribution higher education could make to industry with which Sir Francis Tombs, as Chairman of the Engineering Council, was particularly concerned. Thirdly, there were wider issues, including the attractiveness of engineering as a profession, and the balance of educational provision generally. It would be essential to concentrate more effort on the schools. Smaller companies which had a key part to play in developing the enterprise culture should be brought into this work. Industry Year in 1986 provided a real opportunity of taking this forward.

The Prime Minister, summing up the points made in discussion, noted that industry sometimes needed to adopt a wider concept of self-interest. Unless private enterprise was willing to ensure enough was done to encourage engineering and technical education and training, Government would have to step in. they could never do the job as well as industry itself. She accepted that teachers could do a great deal to get the right image of industry across; industry needed to encourage them to do so, to support them in their work and to give clear indications of the kinds of skills it was looking for. agreed that more attention to be paid to improving the information technology skills base, and that was why she had called the meeting. The Government had already done a good deal, however, and nearly every school, including primary schools, now had a micro computer. The technical and vocational education initiative had a major part to play. Of course, more needed to be done and that was where industry came in. The UK's record on the research side was a good one; it was the practical application of research which we needed to concentrate on now.

The meeting would be followed up through the work of the Information Technology Skills Agency, under Sir Robert Clayton's Chairmanship. Sir Keith Joseph would also arrange

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Y SWYDDFA GYMREIG GWYDYR HOUSE WHITEHALL LONDON SWIA 2ER

Tel. 01-233 3000 (Switsfwrdd) 01-233 (Llinell Union) 6106

Oddi wrth Ysgrifennydd Gwladol Cymru



The Rt Hon Micholas Edwards MP

WELSH OFFICE
GWYDYR HOUSE
WHITEHALL LONDON SW1A 2ER
Tel. 01-233 3000 (Switchboard)
.01-233 6106 (Direct Line)

From The Secretary of State for Wales

12 May 1985

ENGINEERING AND TECHNOLOGY PROGRAMME

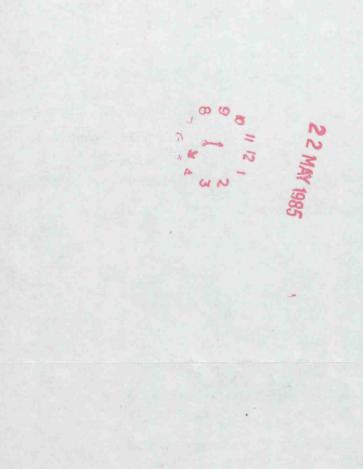
Thank you for copying to me your letter of 14 May to Norman Tebbit about the engineering and technology programme.

I am pleased to know that you now consider that the polytechnics should receive a proportion of the resources available under Phase 2 of the programme. We have only one polytechnic in Wales but I understand that it has close links with some major companies, such as Thorn EMI and STC, and could be expected to put forward a good case for support. However it does not come within the remit of the National Advisory Board and could not be included therefore in the procedures involving the NAB which you mention in your letter. Whether or not it would be necessary for the Wales Advisory Body to become involved is a matter which, if necessary, can be decided at a later date.

I am copying this letter to the Prime Minister, the Chancellor of the Exchequer, the Secretaries of State for Defence, Employment and Scotland, the Minister without Portfolio, the Chief Secretary to the Treasury, Sir Robert Armstrong and Sir Robin Nicholson.

Non

The Rt Hon Sir Keith Joseph Bt MP Secretary of State for Education and Science



# TOP INDUSTRIALISTS SUPPORT 'SWITCH'

The Prime Minister today met 26 of Britain's leading industrialists at No 10 Downing Street, to discuss their part in the national effort to increase the number of students studying engineering and technology in higher education.

With the Prime Minister at the meeting were the Secretaries of State for Education and Science, Scotland, Trade and Industry, and Employment; the Minister without Portfolio; and the Parliamentary Under Secretary of State for Trade and Industry, Mr John Butcher.

The industrialists said that they welcomed, and fully supported, the Government's initiative to increase the output of engineering and technology graduates and postgraduates - the 'switch'.

They committed their firms to giving substantial and continuing practical help to the universities and polytechnics benefiting from the Government's programme. They offered more up-to-date equipment, more help with teaching staff and with the design of relevant courses, and they undertook to provide more sandwich course places and to sponsor more students.

It was agreed that industry's response should be channelled through the Information Technology Skills Agency, set up under the CBI's education foundation. Its chairman is Sir Robert Clayton of GEC. The Secretary of State for Education will also be holding further detailed discussions with the industrialists and with higher education.

The Prime Minister will be holding a further meeting with the industrialists at the beginning of Industry Year 1986, which will give them an opportunity to report progress.

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# 10 DOWNING STREET

# **Press Notice**

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2. NOTES TO EDITORS 1. A full list of the industrialists who attended the meeting is attached. The Engineering and Technology Programme - the 'switch' provides £43 million of Government money to pay for more students in higher education to study engineering and technology over the next three years (DES Press Notice 62/85, 19 March 1985). In the first phase of the programme, announced last month (DES Press Notice 83/85, 3 April 1985), 20 universities will receive about £3.2million to pay for an extra 5.79 engineering and technology students from this autumn. Second phase admissions will take place in autumn 1986, with allocations to be announced this summer. 4. Other significant education initiatives include: a £38 million programme for information technology in higher education between 1983 and 1986 (announced in 1982) for the creation of an additional 5,000 places in electronic engineering and computer science at higher diploma, degree and postgraduate level in polytechnics and universities the universities' plans to increase student intakes by some 3,000 in both 1984/85 and 1985/86, this increase being composed mainly of science and technology students the programme of the National Advisory Body for Public Sector Higher Education for a substantial shift of resources into engineering and other vocational provision in polytechnics and institutes of higher education £13 million through Education Support Grants in 1985/86 to help equip further education colleges at non-advanced level to ensure that students in vocational subjects receive an education which takes account of the industrial and commercial applications of IT. funding will be available in 1986/87 and subsequent years.

## LIST OF INDUSTRIALISTS

Sir Austin Pearce (British Aerospace)

M Bett (BT) in place of Sir George Jefferson

Robert Thornton (Debenhams)

J D Alun-Jones (Ferranti)

S Toy (Ford Motor Company)

Sir Robert Clayton (GEC and IT Skills Agency, CBI)

Derek Roberts (GEC - Director of Research)

Sir Austin Bide (Glaxo Group)

D A Baldwin (Hewlett-Packard)

Sir Edwin Nixon (IBM(UK))

J H Harvey-Jones (ICI)

R G C Messervey (Lucas Industries)

Viscount Sandon (Deputy Chairman National Westminster Bank)

Sir John Clark (Plessey)

G Lomer (in place of Sir Ernest Harrison) (Racal)

H Orr-Ewing (Rank Xerox)

Sir Roy Sisson (Smith Industries)

Sir Kenneth Corfield (STC)

P Swinstead (System Designers)

Peter Laister (Thorn EMI)

R E Utiger (T I Group)

Sir Terence Beckett (CBI)

Sir Francis Tombs (Rothschilds/Rolls Royce)

Robin Duthie (Scottish Development Agency)

J S Whyte (National Electronics Council)

P A B Hughes (Logica Holdings)







FORD MOTOR COMPANY LIMITED, BRENTWOOD, ESSEX

#### **Ford Motor Company Limited**

Sam Toy Chairman and Managing Director Brentwood Essex CM13 3BW England

21st May 1985

The Rt Hon Margaret Thatcher, MP The Prime Minister 10 Downing Street Whitehall, SW1 (D3)

Having just returned from the meeting with you, let me first add my thanks to those of my colleagues for giving us your time this morning to deal with the all-important subject of education and, in particular, the present frightening lack of technologically qualified (young) people.

Though my remarks this morning were "simplistic", they were intended to be so, particularly because my colleagues and I had agreed that we should address ourselves strictly to the questions raised in your letter of 19th March, rather than allow ourselves to roam over the minefield of potential criticisms of the educational system, having in mind the time that you and your colleagues could give us.

Having gone outside the brief indicated by your letter, however, a number of very valuable contributions were made. For myself and my Company I would again lay stress on the fact that the shortage of young technologists is a "now" problem and that if we are to rectify this as soon as possible then the Polytechnics are almost certainly best suited to come up with quick results, having in mind their greater flexibility than the established

21st May 1985

The Rt Hon Margaret Thatcher, MP The Prime Minister

Universities and their general tendency to more general scientific training than their University counterparts. All this of course, we would argue, must be paralleled by an improvement in the quality of the young people being admitted to the Polytechnics, and emphasis on a high standard of training within them. Of course, the "Double First" mathematicians are still needed, even in our own industry, but if we are to make the rapid progress we need to make in establishing the much higher levels of technologies in our engineering and manufacturing operations, then we need there to be a much larger pool of what we would call Systems Engineers right now, and I repeat, we believe these are best provided, as we have said, by complementing our already substantial intake of University graduates with many more young people trained in the "polys".

How it is decided to allocate the £43 million is relevant to all of the above in that it was the view of all of us at our premeeting discussion that the majority of it, if not all, should be devoted to this end.

All of the other issues touched on this morning were of course a vital piece of the total jigsaw and I would like to reaffirm that we already provide lecturers and visiting Professors to a number of Universities and Polytechnics, have established "Lecturerships"/Research Scholarships at Cranfield and Cambridge, supply very considerable quantities of equipment, etc, and funds across a wide spectrum of the academic field. One experiment which has proved extremely successful is that of our own engineers collaborating with Loughborough College in devising a training course, who are now contributing regularly with lectures etc, and results are already very gratifying.

Having said this, I am happy to join with Eddie Nixon in his remarks, confirming that we will work on the issue of giving even further assistance of the types mentioned.

21st May 1985

The Rt Hon Margaret Thatcher, MP The Prime Minister

One subject I did feel to be left relatively unexplored was that of "attitudes". Whilst we did talk in terms of visiting schools, undertaking Governorships, and even specifically sponsoring schools, it was the subject of parents' attitudes which I felt could have benefitted from further exploration.

I mention this particularly because of my experience of another subject on which you have made considerable progress over the past four or five years. I refer, of course, to your Youth Training Scheme initiative, and I make no apology for claiming that I have made this something of a personal crusade within my own Company, having realised from the outset its very considerable potential. Potential to train young people more adequately than has happened in the past to enter industry, both big and small, at the age of 18 or 19 and play a fuller part immediately, its potential contribution to reducing unemployment levels and, not least, because of its potential to enable youngsters to learn something of the needs for self-discipline, community service, etc.

To make my point, I was appalled just recently when certain Unions used a "school children's strike" to attack your latest YTS proposals, particularly when I asked my 15-year old stepson to tell me why his colleagues were joining in this charade. reasons he gave me, and which his colleagues had given him for their taking part were, quite frankly, distortions of those elements of the Scheme which could possibly be regarded as negative, almost to the point of being lies, and of course none of the very considerable positives were mentioned at all! Again this is a subject on which I believe we (that is, industry and Government) need to do a much better job of telling the nation the full story. In fact, I would almost say that if the Youth Training Scheme does not make its full contribution to our society, then it will almost be by default on our part. mention this because it could be that your current initiative could also be less successful than it warrants if we fail to make it very clear to parents, as well as schools, Polytechnics and Universities, that the actions being taken are all a part of the

21st May 1985

The Rt Hon Margaret Thatcher, MP The Prime Minister

total strategy for Britain's recovery.

I am taking the liberty, Prime Minister, of sending a copy of this letter to your Secretary of State for Employment and I shall be asking him if he wishes me to talk to his Department on my references to the Youth Training Scheme, but I would like to feel that we could all give more thought to making a better job of disseminating proper and full knowledge of the points we discussed with you this morning, meaning the general public.

I am sorry for the length of this letter, but I felt I should write to you as I have done, if only to re-emphasise mine and my own Company's complete dedication to helping wherever possible.

Mours suiverely Saming

THE GENERAL ELECTRIC COMPANY, p.l.c. PLEASE REPLY TO: HIRST RESEARCH CENTRE, EAST LANE, WEMBLEY, MIDDLESEX, HA9 7PP TELEPHONE: 01-904 1262 TELEGRAMS: RESEARCH, WEMBLEY TELEX: 923429 21st May 1985 The Rt. Hon Mrs Margaret Thatcher MP 10 Downing Street London Prime Vimester I felt that the meeting you held on the subject of Industry and Education was extremely useful, and I look forward to the follow-up in January 1986. My purpose in writing is to record our views on the most important issues of that discussion. Here goes: i) We in GEC have 3 areas of strong interdependance with the universities and polytechnics, a) Research collaboration and our exploitation of the expanding knowledge base to which they contribute at the more fundamental levels. b) The recruitment of the scientists and engineers who are essential to the health of GEC. Typically we recruit 1600 graduates each year and have about 1500 sponsored students at any time - and offer about 1500 vacation training places. Very few companies deal in such numbers, but all companies should be encouraged to achieve or beat those ratios. c) Continuing education, training and re-training are both urgent and continuing needs. We must - and do - take the initiative; at the same time we rely on help from the educational institutions. In this area it is particularly relevant to note the importance of the Open University - a major national asset. ii) We currently provide help to the universities in all the ways suggested in your letter - and one or two others. We do more now than some years ago, and I have no doubt that we will continue to increase such support. continued -**REGISTERED IN ENGLAND: No. 67307** REGISTERED OFFICE: 1 STANHOPE GATE, LONDON, W1A 1EH The Rt. Hon Mrs Margaret Thatcher Page 2 iii) Greater commitment by industry to post-graduate and post-experience training would reduce the pressure for specialised vocational courses at first degree level, thus giving the universities a better chance to accept a more liberal sixth form curiculum and A-level system. This combination of changes would also provide a stronger educational foundation on which to create the "system" skills that are frequently referred to. iv) We agree with the emphasis placed on schools, and we are currently discussing ways of doing more in this area. The problem with maths and physics (and chemistry!) teaching is not just the shortage of adequately competant teachers, but the almost total absence of inspirational teachers in these disciplines. We are totally in favour of industry trying to help, but the real solution must be in overcoming union antipathy to pay differentials. Yours sincerely D H ROBERTS Technical Director The General Electrical Company plc Copy to: Lord Weinstock



National Westminster Bank PLC 41 Lothbury, London EC2P 2BP

Telephone (01) 726 1000

21st May, 1985.

Pent Rine Minter,

Further to this morning's meeting on the supply of Engineers, the key point is to increase the demand for training in the improved environment we are all to create. Something could be done to this end by each one of us, but the really potent factor would be television, e.g., a "soap-opera" along the lines of the "plane-makers" of a quarter of a century ago, but a little more shop floor orientated. I am sure you could influence them off the record!

At the moment, the image of industry is not good amongst the relevant young and the perceived "status" of Engineers is sadly low. To correct this costs no money.

James som by Samban

The Rt. Hon. Margaret Thatcher, M.P., The Prime Minister, 10 Downing Street, London, SW1. Lucas

Chairman

Lucas Industries plc Great King Street Birmingham B19 2XF

Telephone: 021-554 5252

Telex: 338681

The Rt Hon Margaret Thatcher MP Prime Minister 10 Downing Street LONDON SW1

21 May 1985 GM/PP

Dear Prime Minister,

Thank you for inviting me to your meeting this morning.

I was greatly encouraged by the progress we made on high lighting the problems facing us in providing the skills needed to revitalise the wealth creating sector of the nation.

Over the past year, my colleagues and I have carefully studied all the challenges facing us in this matter and I offer a few comments; a number of them came up in the meeting this morning.

The acute shortage of graduate engineers and technologists in this country is well known and in comparison there is a relative over supply of science graduates.

Although the newer specialisms of electronics and computer sciences are recognised, we believe there is still insufficient acknowledgment of the acute need for broadly based multi-disciplinary systems engineers to develop manufacturing systems and business systems.

The first phase of your initiative does not identify this critical emphasis on systems engineers — which is now a recognised major problem for IT users. As yet, only seven universities/polytechnics appear to have recognised this requirement and if we wait for other universities and polytechnics to become aware of the need and to respond in their normal time scales, it will be too late.

We do not think that further enquiries or research on this problem are needed. The Butcher Reports, the ACARD Manufacturing Report and the House of Lords Select Committee Report allow clear objectives to be set for types of graduate needed from Electronics to Manufacturing Systems Engineering.

Immediate impact could be made by joining together existing highly specialised engineering departments and combining resources within certain universities and polytechnics.

Since there is a limited pool of "A" level students, qualified to take science or engineering courses, diversion from pure science and mathematics degrees must be a prime way to increase engineering undergraduate numbers.

We suggest that a considerable number of physics and mathematics courses should be closed and the staff re-formed and re-trained to teach engineering. The courses could then re-open as "Engineering Physics" courses producing people with systems, software and electronic skills.

In the main, universities and polytechnics will only do this as a result of some significant intervention, for they are not sensitive to their "market".

Unless changes are made, this latest money will be channelled into traditional departments and the UGC and NAB have insufficient power to control or influence universities and polytechnics, once the money has been allocated.

Following the Jarrett report, we must have better executive management of engineering resources in Academia and clear distinctions identified within their resources and funds, so that they go for the purposes intended.

We suggest that the UGC and NAB need changes in their constitution and executive management powers to ensure that the identified priorities are implemented against target time scales.

Only your direct intervention can cause these vital changes to be implemented in the face of the academic establishment striving to maintain "Status Quo".

Your initiative to make these changes is actively and enthusiastically supported by all of us in Lucas and we will respond positively with additional funds and people. We hope that the very welcome £43m spread over three years is only a sample of much more money to come - the problems facing us will need far more than this to ensure their resolution. We in Lucas alone, annually spend over £11m on training, sponsoring students and supporting academic establishments, and our expenditure is increasing.

I look forward to our next meeting in January 1986 when we will be able to review our joint progress.

I am sending a copy of this letter to Sir Keith Joseph, Mr Norman Tebbit, Mr John Butcher and Lord Young.

With best writes,

Yours miceraly

Godfry Messeuf

GODFREY MESSERVY

PRIME MINISTER'S MEETING WITH INDUSTRIALISTS: 21 MAY HE GREEN PAPER Background - Secretary of State's statement to the House of Commons Line to Take Keith Joseph is publishing a Green Paper on the development of Higher Education in the 1990's this afternoon (21 May). One of its principal themes is the scope for increasing the contribution that HE can make to industry and to the economy generally - both through the output of skilled manpower and through research and other links.

DRAFT PARLIAMENTARY STATEMENT BY THE SECRETARY OF STATE FOR EDUCATION AND SCIENCE, 21 MAY 1985

#### THE DEVELOPMENT OF HIGHER EDUCATION INTO THE 1990s

- I. With permission Mr Speaker I wish to make a statement about the Green Paper published today on the future development of higher education. Copies of the Green Paper are available in the Vote Office. The Green Paper covers the United Kingdom as a whole and I am therefore speaking with the agreement of my right hon Friends the Secretaries of State for Scotland, Wales and Northern Ireland.
- 2. The purposes of the Green Paper are to present the Government's thinking on future development of higher education, to set the scene for the next decade, and to invite the views both of those involved in higher education and of the taxpayers and ratepayers who finance so much of the cost.
- 3. The Paper has been prepared in the light of advice on future strategy from the University Grants Committee and from the National Advisory Body for Public Sector Higher Education in England, published last September. In Scotland a review of strategy and of planning and funding arrangements for higher education is being undertaken by the Scottish Tertiary Education Advisory Council. The application in Scotland of the policies addressed in the Paper will be considered in the light of the Council's advice, which will be available later this year.

- As well as reaffirming the view of the aims and purposes of higher education defined in the Robbins Report in 1963, the Government believes that it is vital for our higher education to contribute more effectively to the improvement of the performance of the economy. This is not because the Government places a low value on the general cultural benefits of education and research or on study of the humanities. The reason is simply that, unless the country's economic performance improves, we shall be even less able than now to afford many of the things we value most - including education for pleasure and general culture and the financing of scholarship and research as an end in itself. The Green Paper therefore emphasises the need for higher education to become more responsive to changing industrial and commercial circumstances, and the importance of close links between higher education on the one hand and business, the professions and the public services on the other.
- 5. Since 1963 successive governments have endorsed the so-called "Robbins principle" that "courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and who wish to do som. The UGC and the NAB have advised that qualification for higher education should be interpreted broadly and that the test should not be paper qualifications but "ability to benefit". So long as the taxpayer continues to bear most of the cost of higher education, however, the benefit has to be sufficient to justify the cost. Subject to that, the Government accepts that the criteria for entry to higher education - which will, as at present, remain under the control of institutions themselves - should place more emphasis on intellectual competence, motivation and maturity, and less on formal qualifications. These criteria should be applied as rigorously to those with paper qualifications as to those without. The Government does not expect this change of emphasis significantly to affect the numbers of students for whom higher education should be provided. A consultative paper on student support arrangements will be published shortly, as part of the review of such arrangements which I announced on 5 December last.

- 6. As with its policies for schools, in higher education too the Government is committed to raising standards and the pursuit of value for money. In both these areas important reports have recently been published, and are under active consideration.
- 7. The Report of the Committee of Enquiry into Academic Validation in Public Sector Higher Education, chaired by Sir Norman Lindop and published in April, deals with the approval, and monitoring of standards, of degree level courses in polytechnics and colleges. It recommends substantial changes in the arrangements of universities which validate public sector courses and of the Council for National Academic Awards. One proposal is that some institutions in the public sector should in future take full responsibility for their own academic standards and award their own degrees. The Government has invited comments on the Report and will consider these before coming to decisions.
- 8. The Report of a Steering Committee chaired by Sir Alex Jarratt, based on efficiency studies undertaken in six universities, has proposed significant changes in universities' planning and management structures. The present arrangements were developed in a period of increasing resources. Now that resources are no longer expanding, changes are needed if universities are to be able to spend to best advantage the public funding likely to be available. The Jarratt Report will also be relevant to the rest of higher education where other efficiency studies are in hand.
- 9. In research, the Government wishes to ensure that the available resources are used to the greatest possible advantage, which requires more selectivity and planning. The University Grants Committee is developing and promoting new selective allocation and planning arrangements. It is also important that commerce, industry and the public services should take full advantage of what

higher education has to offer through research, technology transfer, business start-up facilities and consultancy services. The Green Paper stresses the need for higher education to pay more attention to the development of such services.

- growth area in higher education, whether for vocational or non-vocational purposes. The Government and local authorities have an important role in stimulating such provision and the Government contributes directly to the development of in-career vocational education through the Professional, Industrial and Commercial Updating Programme. But the cost should not fall principally on the tax- and ratepayer. Employers are recognise more fully their need, in their cum interest to encourage and to pay for the development and updating of their staff, while adults in work can be expected to contribute substantially to the cost of courses that they take for career advancement or for personal satisfaction.
- 11. The Jarratt Report recommends a review of the role, structure, and staffing of the University Grants Committee. The Government has accepted this recommendation, and I shall announce the terms of reference and form of the review as soon as possible.
- 12. The Government's Expenditure Plans published last January indicate the sums that the Government plans to make available for higher education up to the end of the present planning period. Beyond this there are the same difficulties about providing projections of future funding for higher education as there are for other public expenditure programmes. The Government accepts that it must give the best indications of longer term policies for higher education that it can, but planning also requires institutions to manage their commitments and the funds available to them so as to be able to pursue their objectives effectively in circumstances of change and uncertainty. Present projections of student demand

suggest that there will be a substantial fall in student numbers in the 1990s and planning for the changes that will be necessary must begin shortly.

13. The Government will review its policies for higher education in the light of the responses to the Green Paper, and hopes to be able to make a further statement of intentions in the course of 1986.







#### Ford Motor Company Limited

Sam Toy Chairman and Managing Director Brentwood Essex CM13 3BW England

21st May 1985

The Rt Hon Margaret Thatcher, MP The Prime Minister 10 Downing Street Whitehall, SW1



Deal Prime Minister

Having just returned from the meeting with you, let me first add my thanks to those of my colleagues for giving us your time this morning to deal with the all-important subject of education and, in particular, the present frightening lack of technologically qualified (young) people.

Though my remarks this morning were "simplistic", they were intended to be so, particularly because my colleagues and I had agreed that we should address ourselves strictly to the questions raised in your letter of 19th March, rather than allow ourselves to roam over the minefield of potential criticisms of the educational system, having in mind the time that you and your colleagues could give us.

Having gone outside the brief indicated by your letter, however, a number of very valuable contributions were made. For myself and my Company I would again lay stress on the fact that the shortage of young technologists is a "now" problem and that if we are to rectify this as soon as possible then the Polytechnics are almost certainly best suited to come up with quick results, having in mind their greater flexibility than the established

The Rt Hon Margaret Thatcher, MP The Prime Minister

Universities and their general tendency to more general scientific training than their University counterparts. All this of course, we would argue, must be paralleled by an improvement in the quality of the young people being admitted to the Polytechnics, and emphasis on a high standard of training within them. Of course, the 'Double First' mathematicians are still needed, even in our own industry, but if we are to make the rapid progress we need to make in establishing the much higher levels of technologies in our engineering and manufacturing operations, then we need there to be a much larger pool of what we would call Systems Engineers right now, and I repeat, we believe these are best provided, as we have said, by complementing our already substantial intake of University graduates with many more young people trained in the "polys".

How it is decided to allocate the £43 million is relevant to all of the above in that it was the view of all of us at our premeeting discussion that the majority of it, if not all, should be devoted to this end.

All of the other issues touched on this morning were of course a vital piece of the total jigsaw and I would like to reaffirm that we already provide lecturers and visiting Professors to a number of Universities and Polytechnics, have established 'Lecturerships''/Research Scholarships at Cranfield and Cambridge, supply very considerable quantities of equipment, etc, and funds across a wide spectrum of the academic field. One experiment which has proved extremely successful is that of our own engineers collaborating with Loughborough College in devising a training course, who are now contributing regularly with lectures etc, and results are already very gratifying.

Having said this, I am happy to join with Eddie Nixon in his remarks, confirming that we will work on the issue of giving even further assistance of the types mentioned.

21st May 1985

The Rt Hon Margaret Thatcher, MP The Prime Minister

One subject I did feel to be left relatively unexplored was that of "attitudes". Whilst we did talk in terms of visiting schools, undertaking Governorships, and even specifically sponsoring schools, it was the subject of parents' attitudes which I felt could have benefitted from further exploration.

I mention this particularly because of my experience of another subject on which you have made considerable progress over the past four or five years. I refer, of course, to your Youth Training Scheme initiative, and I make no apology for claiming that I have made this something of a personal crusade within my own Company, having realised from the outset its very considerable potential. Potential to train young people more adequately than has happened in the past to enter industry, both big and small, at the age of 18 or 19 and play a fuller part immediately, its potential contribution to reducing unemployment levels and, not least, because of its potential to enable youngsters to learn something of the needs for self-discipline, community service, etc.

To make my point, I was appalled just recently when certain Unions used a "school children's strike" to attack your latest YTS proposals, particularly when I asked my 15-year old stepson to tell me why his colleagues were joining in this charade. The reasons he gave me, and which his colleagues had given him for their taking part were, quite frankly, distortions of those elements of the Scheme which could possibly be regarded as negative, almost to the point of being lies, and of course none of the very considerable positives were mentioned at all! Again this is a subject on which I believe we (that is, industry and Government) need to do a much better job of telling the nation the full story. In fact, I would almost say that if the Youth Training Scheme does not make its full contribution to our society, then it will almost be by default on our part. I mention this because it could be that your current initiative could also be less successful than it warrants if we fail to make it very clear to parents, as well as schools, Polytechnics and Universities, that the actions being taken are all a part of the

SCIENZE + TECH Budget: Pt 3.

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# 10 DOWNING STREET

From the Private Secretary

LOS ACJ bc P. Warry

21 May 1985

#### SWITCH MEETING ON 21 MAY

A further three letters from the Industrialists invited to this morning's meeting have now arrived: one from Robin Duthie, SDA; one from Sir John Clark, Plessey; and one from Lord Sandon, National Westminster.

I shall be circulating a note of the meeting tomorrow.

I am copying this letter and enclosures to Michael Reidy (Department of Energy), John Graham (Scottish Office), Colin Williams (Welsh Office), David Normington (Department of Employment), John Mogg (Department of Trade and Industry), Leigh Lewis (Office of the Minister Without Portfolio), David Halldearn (Mr. Butcher's Office, DTI), Robin Nicholson, John Wiggins (Cabinet Office) and Peter Warry (Policy Unit, No. 10).

MARK ADDISON

Miss Elizabeth Hodkinson, Department of Education and Science.

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MR. R G MESSERVY

MR. ROBIN DUTHIE

SIR EDWIN NIXON we do e mon

MR. JONN BUTCHER

THE RT HON GEORGE YOUNGER

THE RT HON NORMAN TEBITT

THE RT HON SIR KEITH JOSEPH

THE PRIME MINISTER

THE RT HON TOM KING
THE RT HON LORD YOUNG OF GRAFFHAM
SIR ROBIN NICHOLSON
MR M BETT

SIR AUSTIN BIDE

MR ROBERTS

MR. UTTIGER

MR J WHYTE

MR J D ALUN-JONES .

MR. P. LAISTER L

SIR ROY SISSON - Smills

SIR JOHN CLARK

MR. S TOY

MR. H ORR-EWING

SIR FRANCIS TOMBS

SIR ROBERT CLAYTON

SIR TERENCE BECKETT

SIR AUSTIN PEARCE

SIR KENNETH CORFIELD .

THE VISCOUNT SANDON

Mr. J H HARVEY-JONES -

MR. P SWINSTEAD

MR. ROBERT THORNTON

MR. GEOFFREY LOMER

MR. P HUGHES

Logi-

All present

+ Mins

+ Mr. Pehr Wonry

+ Mr. John Wygin MR. R G MESSERVY

(+ Mr Towes)

Mr. ROBIN DUTHIE

SIR EDWIN NIXON
MR D A BALDWIN

MR. JONN BUTCHER

THE RT HON GEORGE YOUNGER

THE RT HON NORMAN TEBITT

THE RT HON SIR KEITH JOSEPH

THE PRIME MINISTER

THE RT HON TOM KING
THE RT HON LORD YOUNG OF GRAFFHAM

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SIR TERENCE BECKETT

SIR AUSTIN PEARCE

SIR KENNETH CORFIELD

THE VISCOUNT SANDON

MR. J. H HARVEY-JONES

MR. P SWINSTEAD

MR. ROBERT THORNTON

MR. GEOFFREY LOMER

IR AUSTIN PEARCE British Aerospace plc Chairman) MR. M. BETT (Director for Personnel & Corp. Services). British Telecom plc (Chairman) MR. ROBERT THORNTON Debenhams plc MR. J.D. ALUN-JONES (Managing Director) Ferranti plc MR. S. TOY Ford Motor Co. Ltd. (Chairman) (Director of Research) MR. DEREK ROBERTS SIR AUSTIN BIDE (Chairman) Glaxo Group Ltd. MR. D.A. BALDWIN MR. D.A. BALDWIN
Hewlett-Packard Ltd. (Managing Director) SIR EDWIN NIXON IBM(UK) Holdings Ltd. (Chairman) MR. J.H. HARVEY-JONES Imperial Chemical Industries plc (Chairman) MR. P.A.B. HUGHES (Chairman) Logica Holdings plc MR. R.G.C. MESSERVY (Chairman) Lucas Industries plc THE VISCOUNT SANDON National Westminster Bank plc (Deputy Chairma) SIR JOHN CLARK (Chairman) The Plessey Company plc SIR ERNEST HARRISON MR GEOFFREY LOMER Racal Electronics plc MR. H. ORR-EWING (Chairman) Rank Xerox Ltd. SIR ROY SISSON Smiths Industries plc (Chairma) SIR KENNETH CORFIELD (Chairman) STC PLC MR. P. SWINSTEAD Systems Designers Ltd. (Chairman) Mr. P. LAISTER (Chairman) Thorn EMI plc

MR. R.E. UTIGER TI Group plc

SIR TERENCE BECKETT CBI

(Group Managing Director)
(Director Seneral)

SIR ROBERT CLAYTON
Information Technology Skills Agency (Charman)

SIR FRANCIS TOMBS RothschildsRolls Royce

MR. ROBIN DUTHIE Scottish Development Agency

Mr. J.S. WHYTE National Electronics Council (Chairman of Pless ey Telecom. Los).

RT. HON. SIR KEITH JOSEPH, MP

RT. HON. NORMAN TEBBIT, MP

RT. HON. TOM KING, MP

RT. HON. LORD YOUNG OF GRAFFHAM

RT. HON. GEORGE YOUNGER, MP

MR. JOHN BUTCHER, MP

SIR ROBIN NICHOLSON

MR. P.T. WARRY

MR. J. WIGGINS

FOR SIR FRANCIS TOMBS
ROLLS ROYCE LTD
FAX NO: 01-

LUCAS INDUSTRIES PLC 20 MAY 1985

# INDUSTRY MEETING WITH THE PRIME MINISTER

# SUMMARY OF CONTRIBUTIONS - 22 COMPANIES REPRESENTED

QUESTIONS		RESPONSES	TOTALS
1.	GRADUATE INTAKE 85	i. ELEC/COMP 4287 ii. MECH/PROD 1021 iii. SCIENCE 1360 iv. OTHERS 1024 NOT SPEC 450	(At flok each, say f81.4m)
2.	SPONSORED STUDENTS 85	NOT ALL CATEGORISED	3258 (At £2.5k each, say £8.1m)
3.	VACATION PLACES 85		3488 (At flk each, say £3.4m)
4.	SPONSORED RESEARCH	17 RETURNS	Say £9.0m
5.	EQUIPMENT DONATIONS	ROUGH ESTIMATE 12 RETURNS	Say £5.6m
6.	SUPPORT FOR UNIVERSITY STAFF	15 RETURNS	Say fl.6m
7.	VISITING LECTURERS	16 RETURNS (NOT COSTED)	436+

# NOTES

FIGURES MUST BE CONSIDERED AS APPROXIMATE. ANSWERS HAVE BEEN "INTERPRETED" AS NECESSARY.

CERTAIN COMPANIES HAVE REQUESTED STRICT CONFIDENTIALITY.



CHAIRMAN AND CHIEF EXECUTIVE SIR JOHN CLARK

20 May 1985

The Plessey Company plc
Millbank Tower London SWIP 4QP
Telephone: 01-834 3855 Telex: 897971

The Rt Hon Margaret Thatcher MP Prime Minister 10 Downing Street London SW1

Deas Prima Luinister,

I look forward to taking part in your meeting on 21 May on the subject of IT Skills Shortages. On the assumption that there will be limited opportunity in that meeting to tell you where Plessey stands on this important subject I thought it desirable to give you our position in letter form.

We have been actively involved in the representations and discussions which led to the formation of the Butcher Committee, in the work of that Committee, and in the formation of the IT Skills Agency as an outcome of John Butcher's work. We expect to continue to play a leading role in the development of the "Triple Alliance" of government, education, and industry for which ITSA is to be the catalyst.

Your decision to invest £43m in IT education is applauded by us. There is however some doubt in our minds about the distribution of these funds. The UGC sector would of course be keen to absorb all of it. Our view is that it is important that two or three of the best of the Polytechnics are allowed to compete for these funds or are otherwise enabled to develop their IT programmes.

It continues to be a central part of our case that higher education must learn the skills of redistribution of resources that the private sector has had to learn, and must not be allowed always to take the view that new things can only be done if new money is provided. The management problems of the universities identified by the Jarratt Report directly relate to this.

We also consider it to be an important condition to be attached to awards under this scheme that departments receiving these funds are not subject to withdrawal of existing levels of funding to be used elsewhere within the university or polytechnic. Perhaps you alone can start the necessary change process to bring proper management principles into our universities.

I wish to lay stress on the word 'quality': - quality of courses, students and teachers. We will not solve this problem unless we raise quality standards across the board, and this is much more important than increasing quantity, especially if doing so causes a further fall in quality. Teaching staff quality is today affected by inadequate salaries for IT teachers. Industry is asked to provide consultancy contracts to key IT staff to bridge the gap between academic and market salaries and we are doing this in a number of cases but what is needed is a salary structure for IT teachers on the same lines as exists for medical academics.

Your letter makes it clear that you are asking industry to do more to help with this problem along the lines of Section 6 of the first Butcher Report. We are of course willing to do more where we see value for money and subject to the necessary judgement of commercial interest and resource availability. does however need to be said that we are already doing a great deal and I attach as an Appendix a summary of Plessey's current activities to support IT Education.

I believe your meeting on the 21 May is a most important step in the building of the "Triple Alliance" and will give impetus and encouragement to ITSA, and I am grateful for the positive interest you have shown in tackling this problem.

Sincerely

5 Shu Couls

APPENDIX

Plessey's present activities in support of IT Education

#### 1. HELP WITH EQUIPMENT:

- \* We already donate equipment to schools usually based on strong ties between our factories and laboratories and schools in the localities.
- \* We are willing to provide access to state of the art equipment where this is relevant and necessary to higher educational bodies.
- \* Some £30k worth of equipment was donated to UMIST in conjunction with a course which we sponsored.

#### 2. HELP WITH TEACHING STAFF:

- \* Plessey already has 5 of its senior management holding visiting professorships in technology at 5 leading universities. We would welcome more.
- \* A substantial number of our staff are visiting lecturers in technology at universities and polytechnics.
- \* We retain and use a large number of university consultants to advise us on our research programmes. There are some 20 on a regular retained basis and a substantial number more whom we use ad hoc. This of course also helps bridge the gap between these individuals academic salaries and their market value.

#### 3. PLACEMENT OF SANDWICH STUDENTS:

\* We have 250 such students now and 100 more starting in Sept 85. The present annual cost is £875k.

## 4. ASSISTANCE IN THE DESIGN OF NEW COURSES:

- \* We have played a part in the development of new IT courses at Bath, York, UMIST, Aston, Buckingham, Edinburgh and Liverpool
- \* We are currently assisting Surrey and Newcastle, also The University of London via Chelsea College and Kings College.
- \* We have a number of senior people on IT Faculty Advisory Committees.

#### 5. RECRUITMENT:

- \* We recruited 500 IT graduates in 1984
- \* In addition to our sandwich student sponsorship we also sponsor a number of undergraduates, reading IT subjects, with bursaries and grants.
- \* We offer vacation training to our sponsored students each year and to a substantial number in addition.

#### 6. RESEARCH:

- \* We are principal participants in the Government's ALVEY and JOERS programmes in research in IT technology. These involve us in major collaborative programmes with universities in many IT fields including materials science, optics and optoelectronics, and linguistics.
- \* We place research contracts with many universities and polytechnics to take mutual advantage of expertise or equipment facilities. We support research fellows and assistants and large numbers of SERC, CASE, and other postgraduate studentships. We collaborate with many higher education bodies informally on many projects too numerous to mention.

#### 7. RETRAINING AND UPDATING:

\* It is necessary for us to be constantly involved in updating our staff in the most advanced technologies and to this end we work closely with selected higher education bodies in designing and mounting courses for this purpose. We are also conscious of the need for such courses to be delivered by distance learning methods and we see major developments ahead on this front.

#### 8. OTHER

\* We are active participants in and supporters of:

Careers Research Advisory Centre
Institute of Manpower Studies
Standing Conference of Employers of Graduates
Understanding British Industry
Engineering Careers Information Service
Various SATRO's
Information Technology Skills Agency
Council for Education Technology

- \* We are sponsoring several booklets for schools in the Hobson's Science support series
- \* The annual Plessey Engineering Case Book is widely used in schools and higher education
- \* We are a "training company" partner with the Production Engineering faculty at Cambridge
- \* We have financed a number of fellowships in IT subjects at Oxford, Cambridge, Surrey, Trent Polytechnic etc
- \* We have helped to set up, finance and run ITEC's at Merseyside and Christchurch
- \* We are represented on the National Steering Group of the MSC's Technical and Vocational Education Initiative
- \* We are represented on the Science Board of SERC and the Technology Subcommittee of UGC

# National Westminster Bank PLC &

Chairman's Office

41 Lothbury London EC2P 2BP Telephone 01-726 1000

#### MEMORANDUM:

TO: D.M. Barclay, Esq., Private Secretary, 10 Downing St, S.W.1

FROM: Lord Sandon, Deputy Chairman, National Westminster Bank PLC, Chairman, Powell Duffryn and Bentley Engineering

#### RE: CONFERENCE - 21ST MAY, 1985 SUPPLY OF GRADUATE ENGINEERS AND TECHNOLOGISTS

- 1. The supply of Craftsmen and Technicians is an in-house responsibility and is usually satisfactorily achieved by bigger companies at modest net cost due to official support, with a spin-off benefit for smaller companies. One feature worth attention, though, is immobility, principally due to mortgage finance being normally restricted to 2½ times gross pay. Thus a move from North to South is often obstructed at the outset.
- The supply of Graduate engineers, however, is another matter, whether mechanical, electrical, electronic or software.
- 3. Improved professional definition of an "Engineer" and greater attractiveness of careers, both materially and intrinsically, is required. The key cause is lack of social status.
- 4. Since most engineers enter engineering employment through the higher education system, conscious decisions are needed at an earlier school age to ensure adequate curriculum bias and encouragement. The Schools Inspectorate might lend their weight.
- 5. Two steps could be taken to alleviate the situation. First, a single national standard for each level of qualification. Secondly, a well thought out perpetual PR programme e.g. a T.V. serial along the lines of the "Plane makers".
- 6. Hitherto, the only road to recognition has been into Management. This is wrong. Firms must encourage (and pay) some of their best men to stay as Design Engineers with management status. There is a chronic shortage.
- 7. Having got the image right, a flow of suitable candidates should be forthcoming, both at ages 16 and 18.

... / .....

# National Westminster Bank PLC & - Continuation

- 8. How to train them? Best results come from sponsorship and especially for the 18 year olds a thin sandwich course; 6 months practical with the sponsor, 6 months academic, for 4 years. A 'thick sandwich' can be appropriate for the 16 year olds in due course. Government should help firms, including the smaller brethren, to double their sponsorship programme.
- In sponsorship, as in general, local universities or colleges, where there can be close liaison, mutual assistance and monitoring, are preferred.
- 10. After graduation, on-going training, not only in specialities, is necessary, as indeed are refresher courses. These are an Industry responsibility.
- 11. To summarise, Government should, to upgrade status, encourage a national standard and then use PR, create many more geographically widespread places for study and then encourage firms financially to fill these places with sponsored students. Generally, they should consider how to improve mobility through more realistic mortgage policies.

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National Westminster Bank PLC 🧆 - Continuation

#### Further Miscellaneous Points:

- A. Companies normally help local educational institutions as much as they think they can afford. More will come gradually if the emphasis is on local development, but equipment is expensive and 'cast-offs' won't do.
- B. Close involvement of Industry in the formulation of academic courses would be beneficial.
- C. Grant emphasis should not be put on Universities at the expense of other establishments.
- D. Universities should not treat students with 'Design and Technology' at 'A' level as "poor relations".
- E. It is noteworthy that the academic world often controls research projects too loosely.
- F. More girls ought to be attracted to the profession.
- G. Apprenticeships should be skill and qualification based rather than time serving.

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# PRIME MINISTER "SWITCH" TO ENGINEERING MEETING There is some interest in your meeting tomorrow with industrialists in relation to the above scheme. We do not know how it will work out, but Department of Education and Science are anxious to make the most of it if the result is positive. In that event, it is important we encourage both Sir Keith and representatives of industry to put over to the media (press, radio and television) industry's good response to a Government initiative. DES are also first for Oral Questions tomorrow, so a Question could be engineered which would also colour the reception of the Higher Education Green Paper about which Sir Keith is to make a statement later. DES have prepared the attached draft press notice or statement. It would be useful to have clearance for its use in one form or

another at the end of the meeting.

BERNARD INGHAM 20 May 1985

TELEPHONE: 01-934-9880/9 21 MAY 1985

### TOP INDUSTRIALISTS SUPPORT 'SWITCH'

Most successful meeting at No 10 - Sir Keith

The Prime Minister today met [26] of Britain's leading industrialists due to at No 10 Downing Street, to discuss how they could help the Government's £43m programme to pay for more students to study engineering and technology in higher education, and are come which with weeks to flag is the freshold of the result of the result of the prime Minister at the meeting were the Secretaries of State for

With the Prime Minister at the meeting were the Secretaries of State for Education and Science, Sir Keith Joseph, Scotland, Mr George Younger, Trade and Industry, Mr Norman Tebbit, and Employment, Mr Tom King; the Minister without Portfolio, Lord Young; and the Parliamentary Under Secretary of State for Trade and Industry, Mr John Butcher.

The industrialists said that they welcomed, and fully supported, the Government's action in allocating more money - the 'switch' - to increase the output of engineering and technology graduates and postgraduates.

They committed their firms to give significantly increased assistance to the universities and polytechnics benefiting from the Government's programme.

The help they offered included more up-to-date equipment, help with teaching staff, and industrial places for sandwich course students. They also offered more active help with the design of relevant courses, a greater readiness to sponsor students and an undertaking to offer worthwhile initial jobs and subsequent careers to graduates.

It was agreed that industry's response could be channelled through, the Information Technology Skills Agency, set up under the CBI's education foundation. Its chairman is Sir Robert Clayton of GEC.

Sir Keith Joseph who is in the lead on the Engineering and Technology Programme, said: "This was a most successful meeting. The leaders of British industry who were present responded as we had hoped and expected. The change in higher education will now gather increased momentum - and contribute even more to Britain's economic recovery." NOTES TO EDITORS A full list of the industrialists who attended the meeting is attached. The Engineering and Technology Programme provides £43 million of Government money to pay for more students in higher education to study engineering and technology over the next three years (DES Press Notice 62/85, 19 March 1985). In the first phase of the programme, announced last month (DES Press Notice 83/85, 3 April 1985), 20 universities will receive about £3.2 million to pay for an extra 579 engineering and technology students from this autumn. Second phase admissions will take place in autumn 1986, with allocations to be announced this summer. Other significant education initiatives include: a £38 million programme for information technology in higher education between 1983 and 1986 (announced in 1982) for the creation of an additional 5,000 places in electronic engineering and computer science at higher diploma, degree and postgraduate level in polytechnics and universities the universities' plans to increase student intakes by some 3,000 in both 1984/85 and 1985/86, this increase being composed mainly of science and technology students the NAB's programme for a substantial shift of resources into engineering and other vocational provision in polytechnics and institutes of higher education £13 million through Education Support Grants in 1985/86 to help equip further education colleges at non-advanced level to ensure that students in vocational subjects receive an education which takes account of the industrial and commercial applications of IT. Further funding will be available in 1986/87 and subsequent years. -0000000-- 2 -

#### MEETING OF INDUSTRIALISTS 21/5/85

#### ACCEPTANCES

Sir Austin Pearce (British Aerospace) M Bett (B.T.) in place of Sir George Jefferson Robert Thornton (Debenhams) J D Alun-Jones (Ferranti) S Toy (Ford Motor Co) \*R J Clayton (GEC) Derek Roberts (GEC - Director of Research) Sir Austin Bide (Glaxo Group) D A Baldwin (Hewlett-Packard) Sir Edwin Nixon (IBM(UK)). J H Harvey-Jones (IC) R G C Messervey (Lucas Industries) Viscount Sandon (Deputy Chairman National Westminster Bank) Sir John Clark (Plessey) Sir Ernest Harrison (Racal) H Orr-Ewing (Rank Zerox) Sir Roy Sisson (Smith Industries) Sir Kenneth Corfield (S.T.C.) P Swinstead (System Designers) Peter Laister (Thorn EMI) R E Utiger (T.I. Group) Sir Terence Beckett (CBI) \* Sir Robert Clayton (I.T. Skills Agency - CBI) Sir Francis Tombs (Rothschilds/Rolls Royce) Robin Duthie (Scottish Development Agency) J S Whyte (National Electronics Council) P A B Hughes (Logica Holdings)

#### APOLOGIES

Sir W Barlow (BICC)

A Poot (Phillips)

PRIME MINISTER THE SWITCH are

# Meeting with industrialists on 21 May 1985

Briefing mainly prepared by D.E.S. is attached. The documents

- Opening statement (flag A), drawing largely on your letter to industrialists of 19 March (flag B);
- Suggestions for handling the discussion, and the summing up (flag C); together with the draft of a Press Notice to be issued by No 10 (flag D);
- iii. Main background brief on the Switch, and what the Government want industry to do and contribute (flag E);
- iv. Details of the Switch programme (more formally called the Engineering and Technology Programme) (flag F);
- Some notes on points which industrialists may raise (flag G);
- vi. Notes on
  - a. Government initiatives to increase the supply of skilled manpower (flag H);
  - b. Employers proposals on measures they could take to support education, which emerged from Mr John Butcher's Committee on IT Skills Shortages (flag J);
  - c. Action being taken by the Government in the schools to improve the teaching of maths, science and

technical subjects, and to attract more pupils into these courses (flag K);

d. A number of letters from industrialists in response to the Prime Minister's 19 March letter (flag L).

#### General .

- 2. You will want the meeting to achieve the following:
  - i. Secure positive commitments from industry to provide direct help to higher education through gifts of equipment, the loan of teaching staff, help in designing courses, the provision of places on sandwich courses, and the sponsorship of more students.
  - ii. Give a good opportunity to the industrialists to state their view of the situation, and the priorities in tackling it. They may want
    - a. to emphasise that there is a problem of retraining as well as of training. Higher education establishments will want to work with companies in providing whatever 'conversion' courses are needed, and much is already being done. But the financial responsibility, and the initiative for getting the right courses off the ground is mainly a matter for industry. Companies will need to be much more positive and flexible than hitherto in arranging to develop their staff to meet the demands of a rapidly changing world;
  - b. to question the sometimes rather academic and unpractical attitudes of university Departments and administrators. Do industry and academic experts agree on
    which courses are best for business as distinct from
    best academically?

- c. To complain about the way in which companies many of them not in engineering or information technology
   'poach' people trained mostly by the large companies
  represented at the meeting. This is essentially a matter
  for industry and the market, rather than Government;
  industry can do most to open up career prospects and
  increase the esteem in which scientists and technologists
  are held as compared with accountants, marketers, etc.
  But there is a question whether the Information Technology
  Skills Agency (ITSA) is broadly enough based to take
  fully into account the rest of industry's requirements
  for such skills: how should this be done?
- iii. To ensure that there is effective follow up
  - a. through ITSA (in England and Wales) and SDA (in Scotland);
  - b. through the CBI (with companies notifying the names of their responsible executives to Mr Michael Bury);
  - c. when the companies are approached by universities;
  - d. (if appropriate) through further meetings between representatives of industry and representatives of higher education institutions, which DES could arrange.
- 3. You may like to ask the Education Secretary to contribute generally to the discussion, and in particular to deal with questions about the curriculum and performance of schools and other education institutions. Other questions are likely to fall naturally to the Trade and Industry and Employment Secretaries.
- 4. This note and the attached briefing incorporate comments from the Scientific and Economic Secretariats at the Cabinet Office.

M A J WIGGINS
Cabinet Office

PRIME MINISTER DES briefing for tomorrow's meeting, with the Cabinet Office handling brief, is attached. A list of industrialists attending is at Flag M, and a note from the Policy Unit at Flag N. You will be turning to the industrialists after you have opened the meeting. DES have primed Sir Robert Clayton (GEC and Chairman of the Information Technology Skills Agency) and then Sir Francis Tombs (Rolls Royce) to expect to be approached first. You will remember that Keith Joseph is tomorrow publishing a Green Paper on higher education. One of its principal themes is the scope for increasing the contributions that HE makes to industry and the economy generally, both through the output of skilled manpower and through research and other links. But the timing of this meeting and the publication of the Green Paper are essentially coincidental, though both are addressing the same general issue. It would be helpful to have a steer from you before the

meeting on the draft Press Notice, at Flag D under a covering minute from Bernard Ingham.

Merle Adelistra 20 Mary

## THE SWITCH

If the Switch is to be effective both industry and universities need to benefit. Two ideas for the meeting:

- Universities should undertake far more specific research projects for industry, (the better ones already do). This would benefit industry; concentrate academe on the real industrial issues; and industry could pay them with equipment or with secondment of good people.
- 2. All Government industrial aid should be linked to the recipient providing community service in return. This could, inter alia, take the form of lecturing in schools about business generally or the loan of high calibre staff for more specific tasks at university. There need be no set tariff: grant applicants would state the community service they do, or intend to do, and the grant application will then be judged on its overall merits.

DETER WARRY

SCOTTISH DEVELOPMENT **AGENCY** Chairman Robin Duthie CBE The Rt Hon Mrs Margaret Thatcher The Prime Minister 10 Downing Street LONDON 20 May 1985 Co from hunster While I shall be attending the meeting on Tuesday I am aware that the opportunity to contribute to the discussion may be limited. The Agency has for perhaps four years now been acutely aware of the shortage of graduates in various technologies particularly electronic engineers and computer scientists. This shortage has considerable relevance to the attraction of inward investment where as you are aware Scotland has been particularly successful. We have consequently had extensive discussions with both industry and universities in Scotland and have already promoted and encouraged the kind of initiatives which you envisage and I thought that it might be helpful to highlight the points which we see as crucial and to give you some examples of the successful initiatives which have been taken in Scotland. There are several of the companies represented at the meeting who are playing a significant part in current initiatives, in particular IBM and Ferranti and I believe that the widespread and varied activities of IBM are of great importance in illustrating how enlightened self-interest can play an extremely important part in industry's contribution. It seems to me that we are fortunate in Scotland in that the lines of communication are short and the universities and technical colleges are very willing to participate fully in such initiatives. The Agency and the Industry Department for Scotland has played its part in encouraging this cooperation and I believe too that the decision of the Secretary of State for Scotland to appoint to the head of the Scottish Education Department a first class Civil Servant whose previous experience was with the Industry Department will prove to be a vital factor in our future efforts. I am attaching a detailed briefing note which I hope that you may find of interest. While much of the information is based on the Agency's own observations from discussion with both industry and academia over recent years, the views of the Scottish industrialists who attended a meeting at the Agency which I arranged last week have been incorporated where appropriate. your succeedy 120 Bothwell Street Glasgow G2 7 JP Telephone 041-248 2700 Telex 777600

#### Scale of the Problem

It is believed that Japan currently produces approximately ten times the number of relevant graduates but what is perhaps even more alarming is that both France and Germany are producing twice as many as the UK.

#### 2 Source of Training

There is an actual substantial shortage. The essential success we want to achieve in indigenous development and success in attracting inward investment depends upon illustrating satisfactory supplies of skilled labour. The key problem for the UK in the short term and medium term is quantity without of course ignoring quality.

Attention must therefore be paid to providing the resources at all levels to increase output just as soon as possible and we believe the need is so great that no proposals which are considered to be well based and which will make a significant contribution to the problem should be turned down. We appreciate that because university funding is almost exclusively provided from Government that the present "SWITCH" funding proposals may be inadequate but we believe that you should consider making further resources available if necessary.

One of the major problems which "SWITCH" will encounter is in meeting the building costs which may be involved and yet space shortages probably occur in those very institutions with the highest reputations and which can contribute most. It might well be that some private sector funding of off-campus buildings might be a way to help to overcome the problem.

The scope for conversion courses for high quality graduates of other disciplines should be explored and there should be maximum provision of part-time modular courses for suitable students both for graduate training and for updating technical staff in industry.

#### 3 Quality of Training

There is concern that perhaps the speed of change of technology and the lack of suitable up to date equipment can cause academic departments to lack awareness of the latest industrial developments. To improve the quality of training industry must play its part by participating in transfer of staff, provision of specialised lecturers and provision of equipment. Provision of equipment, access to equipment in the workplace and in-company training facilities are of paramount importance given the very high capital cost and short lifetime of many technology systems. Appreciating this Barr and Stroud allow the university to use their training department's equipment when their own staff are at college: an example that could well be followed by other companies.

3 Schools Liaison Strathclyde University operate a scheme whereby plant and equipment from companies and university laboratories are loaned to schools to allow primary and secondary pupils to become user friendly. A Newsletter is produced by the university to advise the schools of this facility. OEM suppliers assist too by providing "end-of-run" equipment at cost price. Industry/University R&D Initiatives Through the Co-operative Awards in Science and Engineering Scheme (CASE), Glasgow University PhD students spend three months in industry on specific projects reporting to industrial supervisors. Support from the companies, including GEC and Plessey, takes the form of real time commitment together with approximately £2,000 of financial support for each student. These examples are illustrative only. There are many others of similar type and although these instances are principally Scottish based there is significant interchange between Scottish industry and for example with Imperial College and Birmingham University. Specific Agency Initiatives To promote industry/university liaison, the SDA has introduced a number of key initiatives including: i) Pre-venture capital fund. Together with Glasgow and Strathclyde Universities the Agency manages Kelvin Technology Developments Limited, a £200,000 fund to provide seed corn venture capital for commercialising products and services from university laboratories. This early funding support is critical and a number of appropriate projects have been identified. ii) Location Mechanisms. Along with the two Glasgow Universities, the Agency has launched the West of Scotland Science Park to provide accommodation for high-tech companies who require access to university research facilities. Eight companies are operating from the Park filling completely the first building phase. Success here will be replicated elsewhere. iii) Management of Liaison Companies. The Agency will assist universities in meeting short-term funding gaps in support of their Industrial Liaison companies. One example is Strathclyde Technology Transfer Limited where the Agency, in addition to its financial support, provides management expertise through its own Board representative and its nominated industrial director - in this case from Howden Group. iv) Turing Institute. The Agency funded the Institute to provide a centre of excellence in Machine Intelligence to enable Scottish companies to learn about the techniques and software tools used in Artificial Intelligence and to develop commercial applications. similar scheme has been introduced with the Artificial Intelligence Unit at Edinburgh University.

4 Equity Participation The Agency will support with equity participation companies moving from academic laboratories into the industrial sector, especially where these are in areas of high-technology. Examples are BIOSCOT (from Edinburgh University) in bio-technology, AURORA (from Aberdeen University) and Flexigage (from Glasgow University). Shortage of University Staff The shortage of qualified experienced engineers in most areas of electronic engineering and also many other areas of advanced engineering affects academic institutions as well as companies. Salary differentials have developed (and are increasing) between the industrial and academic communities that mitigate against academic staff recruitment and retention. This problem is acute in institutions located near high-technology companies (particularly multi-nationals). Ways to circumvent these salary problems should urgently be explored. Precedents are available since academic staff salaries in the areas of medicine and dentistry include a favourable differential. The US method of allowing professional staff to undertake significant commercial consultancy up to in some cases half of the individual's time is seen as wholly desirable in part to keep staff up to date and to help to improve relative remuneration levels to retain top quality staff. Present UK provision tends to be limited to a maximum of 1 day per week. In this context, the Scottish Development Agency will be encouraging university staff to become authorised consultants under the Better Technical Services Scheme (BTS) which is now being established as a source of low cost, high quality, technical advice to small firms along the lines of the well-established Better Business Services scheme. Part-time secondment from industry to appropriate and relevant university departments could be of significant help. Schools Much more effort must be put into attracting school leavers into engineering and technology courses and in this connection sponsorship by industry similar to that offered by Ferranti could prove very useful as an additional incentive particularly if sufficient publicity was given to it. There is also ample justification for encouraging many more girls to take relevant courses for the experience of industry suggests that in many cases they make particularly good employees. To offset the declining population of 17-18 year olds projected to the end of the century, a massive effort is required within the schools to persuade pupils to study subjects which will enable them later to follow engineering careers. Industry has accepted that it must assume the responsibility of making engineering as attractive a career as the legal, accountancy and medical professions. Indeed, IBM has already initiated a programme of local school visits by senior management.

institution basis along the lines illustrated earlier.

The SWITCH programme can be used to encourage and reward those institutions which respond positively. If the resources can be found to reward industry likewise for its participation, perhaps by fiscal allowances as in the United States, this too would be helpful.

If the funding of technological universities could be undertaken by a separate body other than UGC it might be very helpful and some positive reward in the form of a multiplier of monies directly resulting from university/industry collaboration would be a useful incentive. performance figures are readily available from existing sources.

The great US institutions like MIT and Caltech have very close industry links and there certainly are in Scotland institutions which will respond very positively indeed to any approaches from industry. There must be similar opportunities in England given sufficient encouragement.

To end on a positive note there was acceptance among the multi-national companies present at a dinner which I organised as a preliminary to today's meeting, that the Scottish graduate engineer was every bit as good as any other European graduate. Whilst there simply were not enough of them it must also be borne in mind that the good graduate is an internationally marketable product and he will go where there are opportunities. We must therefore generate opportunities as well as reward skills if we are to retain and build up this resource. Those who came also very much welcomed your personal interest in the problem seeing in it the likelihood of some real results.



ce J. Wysis P. Warry.

#### DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE YORK ROAD LONDON SEI 7PH TELEPHONE 01-934 9000

FROM THE SECRETARY OF STATE

Mark Addison Esq Private Secretary 10 Downing Street London SW1

19 May 1985

Dear Mark

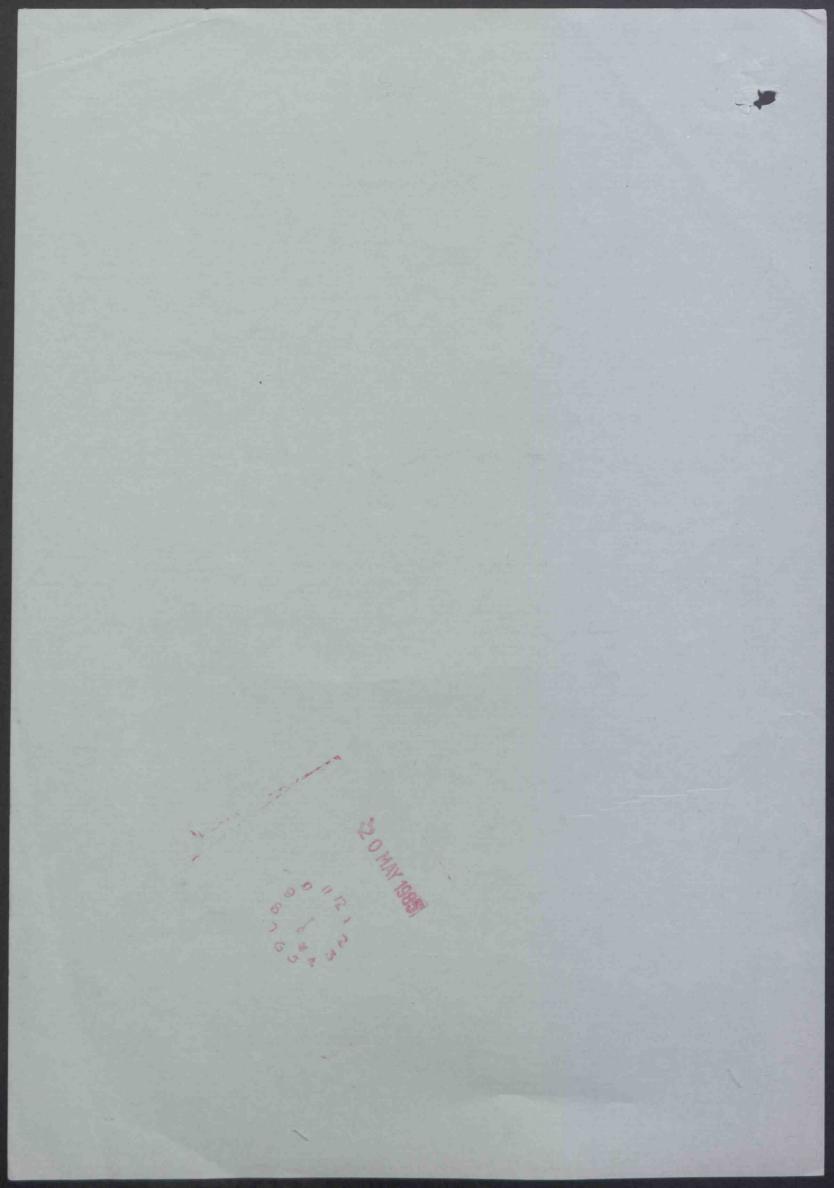
I attach a brief for the Prime Minister's use at her meeting with industrialists on Tuesday 21 May.

I am copying this to John Graham (Scottish Office), David Normington (DE), John Mogg (DTI) and Leigh Lewis (for the Minister without Portfolio), and to Sir Robin Nicholson and Richard Hatfield (Cabinet Office).

Your ever,

PP MISS C E HODKINSON Private Secretary

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## HANDLING OF THE MEETING

## Opening Statement

already put in

To open the meeting the Prime Minister could make the following points:

- (i) Much progress has been made in the past few years to bring industry and higher education closer together. This meeting is an opportunity to give that progress a new momentum.
- (ii) The Government wants higher education to respond to industry's needs and industry to exploit the brain power, creativity and skills of higher education.
- (iii) The Government is committed to holding public expenditure down and has no intention of throwing money at any problem. Even so new money has been found for "the switch". [This is the nickname for action to increase the output of engineering and technology graduates and postgraduates]. £31 million of the £43 million was transferred to the DES programme by cuts in DTI, Department of Employment and other programmes. The other £12 million is UGC money redeployed from other purposes. The decision to give such priority to "the switch" is a response to industry's advice channelled through the Engineering Council and John Butcher's IT Skills Shortages Committee. It is now up to industry to respond to the Government's action.
- (iv) To make a success of the switch the chosen universities and polytechnics need more help from industry in the

form of: (a) Equipment Teaching Staff - this is vital because university salaries are not competitive and, unless industry helps, the planned increase in graduate output may not be achieveable. (c) Placements for students on sandwich courses. (d) Active help with the design of courses. (e) A readiness to offer worthwhile initial jobs and subsequent careers to the graduates. [These points were listed in paragraph 3 of the Prime Minister's letter of 19 March and those present should be ready to respond.] The Government hopes that all the firms represented will agree to help. The stronger the response from industry, the greater will be the momentum of the change in higher education.

An mix 1



## 10 DOWNING STREET

THE PRIME MINISTER

19 March, 1985

Pear Tom.

You will know of the concern voiced in many quarters and especially by business about the need to increase the output of graduate engineers and technologists. Attention has been drawn to this, in particular, by the Engineering Council and in the first report of the Committee on IT Skills Shortages under the chairmanship-of John Butcher at the Department of Trade and Industry.

The Government has been considering these representations very carefully and you will have heard that we have announced today our intention to redeploy some resources for this purpose. I enclose a copy of the Department of Education and Science press notice. We envisage a special programme costing about £43 million over the three years 1985-86 to 1987-88. I am sure you agree that this programme will be worthwhile only if it receives sufficient industrial co-operation and support of the kind offered by the industrial members of John Butcher's committee. The first phase of the programme affecting student intakes in October 1985 will be launched soon - details should be announced next month. Future phases, and the success of the programme generally, will depend crucially on the willingness of industry to play an active part.

I would like to discuss this new initiative with you (and with the others on the enclosed list). I particularly wish to learn how far industry would contribute to such a programme by providing:

- (i) more help with equipment;
- (ii) more help with teaching staff this is vitally important because it is doubtful whether our higher education institutions will be able to recruit qualified staff in sufficient numbers;
- (iii) more placements for students on sandwich courses;
- (iv) active help with the design of relevant
  courses;
  - (v) a readiñess to offer worthwhile initial jobs and subsequent careers to the graduates.

I and my colleagues would also be very interested to hear your views on the following questions:

- (a) which type of graduate is likely to be in greatest demand - for example, should we give priority to electronic engineering or to software engineering or aim for a broader spread? And is the demand principally for university graduates or does industry find graduates from the better polytechnics equally (or perhaps more) useful for many purposes?
- (b) how should co-operation between industry and the chosen higher education institutions be organised? Should it be organised centrally, for example, through the IT Skills Agency, the

Scottish Development Agency, Government
Departments and the UGC; or would it be better
for each participating company to "adopt" one
or more participating institutions?

(c) would industry be willing to sponsor more students? This is likely to be a very effective way of influencing the career choices of pupils at school and encouraging more young people to study maths, physics and technology.

- Finally, if there were time, I should like to take the opportunity to seek your views on what more could be done - and I know a lot is being done already - to change the attitudes of parents, teachers and pupils towards careers in business.

I hope you will be able to meet me, Keith Joseph and other colleagues on Tuesday, 21 May at 1000 hrs in No.10 Downing Street. Would you please let my office know if you can come.

Jang and

The Lord Boardman MC TD DL

DISCUSSION

## Objectives

Sir Robert Clayton Then Sir Francis Tomas

The Prime Minister's objectives in the discussion should be to secure NB: Shert wit acc. the greatest possible commitment to help from those present. She might refer first to the offers of help already received (letters from Sir William Barlow and Lord Weinstock) and call first on the GEE representative (Mr Roberts) to endorse the GEC approach.

> Next she might ask whether help will be forthcoming on all the points listed in the third paragraph of her letter of 19 March: see (iv) above.

> Third she should get the meeting to agree to the recommended procedure for organising co-operation - see paragraph 6 of the main brief. Points to make:

- (i) To ensure that universities and polytechnics really have firm additional support from employers we shall give them provisional allocations subject to their quickly producing evidence of such support.
- (ii) Those in your head offices and operating companies who deal with universities and polytechnics can therefore expect urgent approaches in the near future. Could you please ensure that they are expecting this and will be helpful.
- (iii.) Such local arrangements may not be enough: universities and polytechnics may not know where to turn, and you may be able to volunteer assistance that your regular contacts do not need. There is a need for a clearing house. The new IT Skills Agency under Sir Robert Clayton has agreed to organise the help in England and Wales. In Scotland the Scottish Development Agency will act as co-ordinators.

15 ITSA broadly enough based?

(iv) In any case, could all firms notify the names of their responsible executives to Mr Michael Bury at the CBI?

#### OTHER POINTS

## Polytechnics

Too dinit?

It is agreed that most of the money should go to the <u>best</u> university departments in engineering and technology. Industrial leaders have given conflicting advice about the importance of including polytechnics. Points to make:

- (i) Keith Joseph and Norman Telbbit have consulted ITSA about polytechnics. They have accepted advice that some polytechnics should be included (but only the best) and that the bulk of the extra money should go to the best university departments.
- differences of view? Are UGC competent to Judge? Are industry?
- (ii) Whether in universities or in polytechnics only high quality courses should be financed - ie. those marked alpha by both industry and top academics.
- (iii) Unduly specialised courses should not benefit from this extra money.

Are these points agreed?

## Criticisms of Universities

Some industrialists present may voice criticisms of the willing ness of Universities to change to meet the needs of industry. The Prime Minister should not allow the meeting to be diverted from its immediate purpose - which is to secure agreement to extra help from industry in a joint endeavour. Instead she could, if necessary, invite Sir Keith Joseph to arrange a separate meeting later between the critics, the Chairman of the UGC and the representatives of the Universities.

## Developments in the schools

It would be a waste of resources to expand the number of engineering and technology places in higher education and then find that the supply of qualified school leavers was insufficient to fill them. This is why the Government's policies set out in Better Schools are crucial to the success of the exercise in the longer term. [A brief on schools is at Annex 5 and Sir Keith Joseph should be asked to speak.]

## Sponsorship

Bright pupils will not choose to apply for engineering and technology courses unless they believe that industry really wants them and will give them worthwhile careers. Sponsorship is one way of convincing more bright pupils that the effort of stuyding these subjects will pay off. Do the industrialists present agree? Will they sponsor more students?

## Attitudes to industry (if time allows)

The last point mentioned in the Prime Minister's letter of 19 March is what could be done to change the attitudes of parents, teachers and pupils towards careers in business. The Prime Minister should make it clear that she knows that a great deal is being done already. If there were time, she might take the opportunity to get the agreement of those present to support one of the objectives of Industry Year 1986 which is to form a link between every secondary school in the country and at least one local firm.

#### SUMMING UP

The Prime Minister's aim will be to be able to say that those present fully supported the Government's action in allocating more money to the switch and committed their firms to help. In order to avoid generalised expressions of goodwill, she should indicate that No 10 will be issuing a Press Notice [the text is being cleared with No 10 Press Office] -

- Listing those present
- Registering their welcome of the Government's £43m programme
- Recording their agreement to provide extra help in cash and kind to universities and polytechnics receiving Government funds.

BRIEF FOR PRIME MINISTER'S MEETING WITH INDUSTRIALISTS TUESDAY 21 MAY 1985 PURPOSE OF MEETING 1. The intention is to secure from the companies represented pledges of concrete support - in cash or in kind - for the Engineering and Technology Programme announced on March 19. If time permits, the meeting might also elicit their views on the other issues raised in the Prime Minister's letter of 19 March -Annex 1. BACKGROUND Government policy since 1979 has consistently been to encourage a movement in higher education towards science and technology in the interests of strengthening the industrial base. A number of initiatives have been launched and details are in Annex 2. Nevertheless many industrialists believe that the moves have not gone far enough and several recent reports have claimed that expansion of the new technologies will be constrained by shortages of highly skilled manpower. In February 1984 the Engineering Council advocated an increase in the resources provided for the education of engineers. In July 1984, the first report of Mr John Butcher's Committee on IT Skills Shortages concluded that, while precision was impossible, the employment market would for the forseeable future be able to absorb more IT skill manpower (including manpower in the fields of production engineering and computer aided manufacture).

- 3. Employers on the Butcher Committee recognised, in discussion, an increased obligation on them to assist the higher education system to respond. They recognised, in particular, that many industries in overseas competitor countries (United States, West Germany) played a much more supportive role than the average for the UK. They listed ways in which support could be given at all levels of education (Annex 3). To take matters forward, the IT Skills Agency was formed in October 1984 under the aegis of the CBI with a remit that included the co-ordination of support in this field for the education system. In Scotland a similar role is to be performed by the Scottish Development Agency.
- 4. Industrialists argued that the Government should inject more public money. In the 1985 Budget Speech the Chancellor of the Exchequer announced the Government's response extra money for engineering and technology of £43m spread over 3 years. In announcing this Programme, the Government stressed the critical importance of industrial support. Evidence of specific industrial support will be a condition of inclusion in the second Phase of the Programme (further details of the Programme are at Annex 4).

### GAINING INDUSTRIAL SUPPORT.

5. The Prime Minister's letter of invitation suggested possible ways in which industry might contribute (a number of these areas matched offers by the industrial members of the Butcher Committee). Discussion might centre on:-

- i. more help with equipment Teaching at higher education level in fields relevant to the new technologies requires equipment which is expensive and rapidly obsolete. Instruction in areas at the forefront of technology may call for the use of equipment only available in industrial firms. If firms wish teaching in higher education to be conducted with adequate up-to-date machinery, it will be necessary for donations or loans to be more widespread and more generous than they have been in the past.

  While there have undoubtedly been numerous examples of generosity by individual companies, in general H.E. institutions in the U.K. received large U.S. To individual companies, in general H.E. institutions in the U.K. receive less support than comparable institutions in the United States. And several large U.S. IT companies are making substantial donations to U.K. institutions, knowing that this will help with subsequent staff recruitment and market penetration (IBM, Hewlett Packard).
  - ii. More help with teaching staff Manpower with the skills necessary to teach effectively in new technological areas is scarce. H.E. institutions cannot compete with current market rates of pay. Any substantial increase in student numbers will call for greater support by industry in this area. This could take the form of industrial consultancies for university staff to increase their earnings (and hence attract recruitment into vital IT areas). Companies can also help by loaning staff to teach part-time, perhaps as visiting professors, thus sharing the skills they have. But staff made available in this way must be of top quality and be regularly available to undertake teaching programmes. There are already some examples ' of good practice: more are needed.
  - iii. More placements for students in sandwich courses Employers regularly claim that students from sandwich courses gain valuable experience that increases their immediate utility. This belief is also reflected in recruitment practices. Such provision depends, however, on a ready supply of suitable placements. In recent years there has been great difficulty in finding enough suitable placements for students on such courses, perhaps because

of recession. While the difficulties are realised and there has recently been some small easement, problems still remain and can only be resolved by companies themselves. MSC grants are provided to employers hosting placements for engineering, technology and computer science students at first degree and higher diploma level. At a cost of £4m in 1985/86, these offer some offset to the cost of providing placements.

- iv. Help with design of relevant courses Complaints are regularly heard that courses in higher education are not suited to the needs of industry. There is scope for closer cooperation by industry, therefore, in developing suitable courses and in cooperating to ensure they remain up-to-date. Companies may themselves wish to offer assistance to local HE institutions rather than wait to be asked. They might also respond positively to invitations to sit on appropriate educational bodies (ie examining, validating etc).
- Readiness to offer worthwhile initial jobs and subsequent careers to graduates Much has been said about the need to attract more able students into science and engineering. Such students will be looking for signals from the employment market. Unsuitable first appointments will exacerbate staff turnover and send the wrong signals to younger students about to embark upon course selection. The more able will also want a career structure that will take them rapidly to the higher reaches of companies. Companies must show that all able entrants, including women, can really expect progression to the highest levels of companies. Without this, able pupils will continue to go into the professions and more effective ways of reaching influential management positions, notably accountancy and marketing.
- vi. More sponsorship of students Sponsorship by companies enables students to receive sums of up to £1,200 without maintenance grants being reduced. A recent U.K. survey showed that 75% of the students being sponsored were on engineering courses. Sponsorship helps companies, by enabling them to gain a first hand impression of potential employees, and students, by making more attractive courses in the subject areas most likely to lead to sponsorship. The Government has recently increased the sum

students may receive in this way to enable more positive signals to be given to prospective students about the attractiveness of engineering and technology courses. Industry can now respond by making sponsorship

widely available and publicising the efforts it is making.

## 6. HOW THIS HELP CAN BE MADE AVAILABLE.

Institutions already included in Phase 1 of the E & T Programme will be asked to report soon on what additional industrial assistance they have obtained. Ministers are determined that the E & T Programme should be backed by increased industrial contributions in cash and kind. In Phase 2, institutions will be given provisional allocations conditional upon demonstrating that they have obtained new industrial backing before government funding will be confirmed. Companies may wish to contact institutions directly, including those with whom such links already exist, or may, alternatively, wish to indicate to the IT Skills Agency their readiness to help. In Scotland the Scottish Development Agency will fulfil a comparable role and the SDA Chairman will have met Scottish industrialists a few days before the Prime Minister's meeting. Named contacts should be notified to Mr Michael Bury at the CBI.

## 7. OTHER ISSUES.

In her letter of 19 March the Prime Minister also asked:-

## i. Which type of graduate is likely to be in greatest demand?

Advice to Government on where the greatest need will in future lie tends to vary quite widely. IT manufacturers (who will be substantially represented at the meeting) normally place the emphasis on electronics engineering though certain types of advanced physics can provide the research base needed to keep at the forefront of technology. Some significant voices advocate general engineering courses (eg at Cambridge) of high quality with specialisation at a late stage (and subsequently at postgraduate level). An increasing body of opinion argues, however, that the future need will be for "applications people": computer scientists and engineers able to spread the use of technology in the user industries and that this will be the preponderent need by the end of the decade. The Government has already recognised the substantial support for students from the better polytechnics, who may well be particularly closely industrially orientated. But those present may have further views on these questions to offer.

## ii. How to achieve cooperation between industry and higher education institutions

Proposals for how this should be handled for the programme are described above (para 6). More widely, and for the future, there are questions of local and regional support to address. Sir Robert Clayton, as Chairman of ITSA, may wish to contribute on the approach they are adopting and others present may well have views about useful mechanisms to be pursued.

## 8. CHANGING ATTITUDES IN THE SCHOOLS.

The Government has recognised that securing more good quality graduates in relevant subjects from the higher education system must depend crucially upon suitable candidates coming forward from schools. A note on action in the schools is at Annex 5.

## 9. POINTS LIKELY TO BE RAISED.

Some replies to the Prime Minister's letter have raised points that may well be aired in discussion at the meeting (particulary that from Lord Weinstock). A note on the points in that letter, and others likely to arise, is at Annex 6.

ANNEX 4

### THE ENGINEERING AND TECHNOLOGY PROGRAMME

1. The programme was announced on March 19. It is costed at £43m over three years, 1985-8. The costs are shared between DES, Departments of Trade and Industry, Employment and Energy and the Scottish and Welsh Offices. The objective is for more high quality students in higher education to study engineering and technology, at both undergraduate and postgraduate level.

## Phasing

2. The programme money is being committed in two phases:£14m in Phase I and £29m in Phase II. Given the urgency of increasing graduate output in these subjects it was agreed that departments which could admit additional students without needing to erect new buildings, should be allowed to bid competitively for funds to admit students from October 1985. As a result, 475 undergraduates and 104 postgraduate places at a total of 20 universities have been created for take-up this autumn. Places under Phase II will become available from 1986.

## Institutional mix.

3. Phase I provision has been located solely in universities and this was in line with advice the Government initially received from industry (and especially the Engineering Council) that the emphasis should be on high quality graduates and therefore on universities. This advice has recently been modified: a number of industrialists have now commented on the value of the graduates from the best polytechnic engineering departments. At a meeting with the Secretary of State for Education and Science and PUSS for Industry (Mr Butcher) on 7 May, ITSA advised that there should be some modest provision in this programme for polytechnics and other non-UGC institutions. The Secretary of State is accordingly recommending to his colleagues that a sum of money, still to be determined, should be reserved for this purpose from remaining funds.

## Mode of allocation.

4. Allocations in Phase I were made (and in Phase II will be made) on the basis of cost-competitive bids from institutions. Advice is being taken from the UGC (on academic quality) and industrialists, under the aegis of ITSA (on usefulness to industry). The Engineering Council will also be tendering relevant advice. The National Advisory Body on Public Sector Higher Education will be advising on the academic quality of polytechnic bids: and SERC on postgraduate courses. Provisional decisions on Phase II allocations will probably be announced in mid-late June.



5. Unit costs in Phase I were well below normal because competitive bidding enabled marginal capacity to be exploited. Options for Phase II would include large expansion in a few high quality institutions but such a course would carry relatively higher unit costs. Allocations under Phase II will also need to take account of bids from non-UGC institutions (Cranfield, Open University, Salford and polytechnics).

## Industrial support.

6. The Government will be expecting industry to contribute concrete support - in cash or kind - to those institutions allocated funds under this programme. It will be a strict condition of confirmation of government funding in Phase II that provisionally selected institutions should be able to demonstrate that such industrial support has been forthcoming. The timetable of Phase I did not allow for conditional allocations of this kind, but institutions will be required shortly to inform the government of what industrial support they have obtained.

## Graduate output.

7. It is expected that, on certain assumptions about Phase II, the programme will by 1990 have produced a total additional output of engineering and technology (including computing science) graduates of about 3,500 of whom up to 780 will have been on postgraduate courses. Annual output of first degree graduates in Engineering and Technology is now projected to increase from 15,900 in 1985-6 to 18,400 in 1989-90: slightly more than half this increase of 2,500 would be attributable to the Engineering and Technology programme. These figures are however provisional and depend on decisions yet to be taken on the remainder of the Programme.

ANNEX 6

## POINTS INDUSTRIALISTS MAY RAISE

There are a number of other points which industrialists may raise. Some have been mentioned by Lord Weinstock in his letter and accompanying note of April 19 to the Prime Minister (Attached).

i. Too few pupils are mastering mathematics and science in our primary and secondary schools. These subjects should be taught with a more practical bent. There are not enough effective teachers in this area (particularly of mathematics).

Response:

Get K) is deal.

There are two aspects to this: the school curriculum and the training of teachers. We are dealing with both. On the curriculum, our policies are designed to create a stronger emphasis on mathematics and science in the schools and to increase the practical dimension of what is taught. [For example: the new "AS" level courses starting in 1987 will encourage those taking arts A-levels to continue studying maths and science: the new GSCE courses starting in 1986 will have a significant practical content]. On training of teachers, our policies are designed to improve the supply of effective maths and science teachers. We are increasing the number of initial teacher training places in these subjects and we are considering ways of attracting greater numbers of able young people into these courses, in recognition of recruitment difficulties currently being experienced. We are subjecting the training courses themselves to more rigorous "quality control": and we are giving priority to these subjects in allocating grants for in-service training.

ii. The Engineering and Technology Programme should include retraining of existing engineers.

Response

Agree that professional updating will be crucially important in fast -changing technologies. This programme concentrates on producing top quality new engineers and technologists. Companies themselves must shoulder a major responsibility for retraining and updating of skills. Evidence [in the MSC/NEDC report on "Competition and Competence"] suggests that companies in U.S., West Germany and Japan more readily accept this responsibility.

So far as Government is concerned, there is the work of the MSC in this area, DES's "PICKUP" programme and the UGC and the NAB have set up a joint Standing Committee

on "Continuing

Education". This is examining the scope for a larger role for universities and polytechnics in the professional updating of engineers and technologists.

iii. Large companies have to carry the training burden for the whole of the industry.

Response:

Some firms say they train people, only to have them "poached" by others. John Butcher's Committee which looked at this, concluded that the poaching rate was not as high as is sometimes claimed [They estimated a maximum turnover of 20% of graduate recruits within two years of starting work]. In any case some industrialists have proposals about how the problem might be dealt with. ITSA could be a useful forum for consideration of these. But this is a matter for self-regulation within the industry: not for Government. [Note: Don't let general arguments obscure the need to support this exceptional exercise sparked by employers on Butcher].

iv. Support for recommendation of House of Lords Select
Committee on Science and Technology for a new statutory
Education and Training Board.

Response:

The Government is due to respond to this report in July. It is difficult to say much before then, although the Government would probably need very persuasive evidence to be convinced of the need for another statutory body in the educational and training field (which would be a new quango in all but name).

v. Too many government departments and institutions are involved: the new programme needs single-minded direction.

Response:

The programme is being given clear direction: the DES is the lead department, but other important interests have to be consulted and involved. This is essential to success.

vi. More generous tax concessions on donations of equipment to educational establishments - such as they have in the U.S. would encourage industrialists to do a great deal more.

Response:

(The US arrangements allow companies to set against corporation tax not simply the cost of equipment given to universities, etc but also to claim a further deduction in respect of profit forgone through not selling the equipment to a customer. It is hard to see much logic in this further inflation of the tax relief, which may not survive the proposed simplification of the US tax system. Hewlett-Packard (a US controlled company represented at today's meeting by Mr D A Baldwin) have been urging the US arrangements on UK Government Departments, without success; the subject is not mentioned in Mr Baldwin's letter of 15 May to the Prime Minister.)

Response:

Full relief against corporation tax is generally allowed where companies give equipment to educational institutions. Equally they get full relief on cash gifts made under covenants to suitable educational institutions, and the same applies when they sponsor students. These reliefs are sensible and wideranging, and I hope companies will make more use of them than hitherto.

vii. There should be earmarking of funds for engineering departments in higher education institutions.

Response:

The problem is better understood than it was 4 or 5 years ago, and the Government will be watching it carefully. The UGC have already expressed to universities their dissatisfaction with the level of funding for engineering departments and expect the position to improve. In the public sector the case for improving the relative weighting factor for engineering courses is under consideration. We are determined that the Engineering and Technology programme will mean more good graduates in the relevant disciplines, and we are satisfied we can achieve this without earmarking funds for particular purposes in particular institutions - a course which would be fraught with difficulty for the Government's relations with those institutions.

viii. Present shift towards science and technology in higher education is not enough

Response:

The Government is continuing to advocate further moves towards science and technology within universities and the public sector and we will be stressing this in our forthcoming Green Paper on Higher Education. Such

changes cannot, however, be made speedly without substantial additional resources: engineering provision is considerably more expensive than arts provision. And remember, there is no point in providing places in higher education unless sufficient school leavers come forward with A levels in Maths and Physics.

i. Information Technology in Higher Education. Announced in December 1982 by the Secretary of State for Education and Science, this programme provides £38m between 1983 and 1986 for the creation of an additional 5000

ii. The National Advisory Board for Local Authority Higher Education (NAB) Programme Planning Exercise. The Nab's programme planning exercise for 1984-85, and its "roll forward" for 1985-6 already make provision for a substantial shift of resources into engineering and other vocational provision in polytechnics and institutes of higher education. These plans allow for intakes for full-time and sandwich engineering courses to rise by 15% between 1982-83 and 1984-5; in mathematics and computing by 50% and in science by 7%, again between 1982-83 and 1984-5.

iii. The Universities have already indicated in response to a UGC request that, at their new levels of staffing and funding, they will seek to increase student intakes by some 3000 in both 1984/85 and 1985/86 and that this increase will be composed mainly of science and technology students.

- 2. At the non-advanced further education level, the Government has allocated, via the Education Support Grant system, £13m to LEAs in 1985-6 in order to help equip further education colleges to ensure that students in vocational subjects receive an education which takes account of the industrial and commercial applications of IT. Further funding will be available in 1986/87 and subsequent years.
- 3. Specific Government initiatives should enhance secondary pupils' interest in and understanding of the new technologies. The Microelectronics Education Programme run by the DES, and the various Micros in School Schemes run by the DTI have together raised the profile of the new technologies in our schools, through coherent programmes of teacher training, material development, information dissemination and half price hardware provision.

## Section 6 — A New Partnership Between Industry and the Education System

37 Representatives of industry have presented an imaginative set of proposals aimed at overcoming some of the constraints noted in the previous Section of this Report and at encouraging a "partnership for change" to enable the education system to respond more effectively to industry's changing requirements.

38 Industry is ready to undertake the following initiatives:

## i Higher Education

- Supply key executives as Visiting Professors and help with the supply of lecturers.
- provide consultancy and employment opportunities for academics to enhance dialogue at local level and increase the earnings of key individuals.
- provide equipment on loan or as gifts and give access to very expensive leading edge equipment which universities and polytechnics could not possess.
- commission universities and polytechnics to supply contract education, eg conversion courses, development courses, updating programmes etc.
- make key people available to help coordinate activities to tackle shortages.
- enter into training partnerships with academic bodies.
- establish "IT Training Companies" with equity participation by companies, academic institutions and Government. In this context the Committee welcomed the proposals put forward by DES to enable polytechnics to trade on their own account.
- increase sponsorship of students on relevant undergraduate and post-graduate courses.
- provide greater opportunities for students to obtain industrial experience within academic programmes.
- encourage greater interchange of views between industry and education.

#### ii Schools

- offer staff to teach part-time and to relate school work to industry.
- help train teachers by visits, secondments, exchanges and courses.

- provide equipment on loan or as gifts.
- Participate actively in programmes designed to promote vocational studies.
- Help schools to appreciate the vocational needs of children and how to respond to them.

## Points for Action

- 39 Preliminary discussions between Government and industry have identified the following areas of agreement:
  - i The UGC and NAB will identify their teaching needs so that industry can gauge what assistance can be provided.
  - ii Institutions will be invited to identify their needs for equipment.
  - iii "Good practice" in giving students relevant industrial experience will be publicised.
  - iv A more formal system for regular teacher visits and secondments to industry will be examined.
- 40 Action along these lines, taken together with the other proposals submitted by industry, creates a new partnership between industry and higher education which should enable changing national skill requirements to be met in a more relevant, flexible and cost-effective way The Government will vigorously pursue all these ideas including novel concepts such as the IT training companies. The Committee's Second report will review progress made in these areas.

## ACTION IN THE SCHOOLS

- 1. The usual qualifications for engineering and technology degree courses are maths and physics A levels. It would be a waste of many more undergraduate places if the supply of school leavers with these qualifications does not match. Hence the importance of the Government's policies in Schools.
- 2. As well as the formal qualifications, positive attitudes to engineering and technology need to be developed in school. The Government's policies are intended to widen the base of mathematics and science in the schools. The introduction of AS levels (first courses in 1987) will encourage those taking arts A-levels to continue the study of mathematics or science. The policies for the curriculum set out recently in 'Better Schools' and in 'Science 5-16: a statement of policy' are designed to ensure that all pupils continue the study of a broad and balanced science course to age 16. This is at present true of too few pupils, especially girls, and options post-16 are correspondingly foreclosed.
- 3. More widely, it is Government policy that subjects should be taught so as to bring out their relevance for adult life. For all pupils, the practical dimension to learning should be reflected in the content and teaching of subjects (as is now happening increasingly, for example, in mathematics in the wake of the Cockcroft Report) as well as in the balance between subjects. Thus more pupils of all abilities should study craft, design and technology to age 16. The national criteria for the new GCSE examinations (first courses 1986) stress practical skills, reasoning and the application of knowledge in all subjects. It is an important part of Government policy that these principles should equally inform the curriculum in primary schools, where the foundations for later attitudes and enthusiasms are laid.
- 4. Under the <u>Technical and Vocational Education Initiative</u> pilot projects will soon be running in most local education authorities. These projects are designed to test ways of organising and managing a variety of new approaches to the provision of full-time general, technical, vocational and pre-vocational courses for young people 14-18. The Initiative is being administered by the MSC and will contribute to the Government's aims as set out in the recent White Paper "Better Schools".

# THE GENERAL BLECTRIC COMPANY, plc. 1 STANHOPE GATE - LONDON WIA 1EH 01-463 8484

(/f

19th April, 1985

Dear langaret,

(27)-

Thank you for your letter of 19th March, 1985 about graduate engineers and technologists.

GEC will, of course, do what it can to help, and I attach a note on the questions in your letter, with some facts about what we are already doing. There are four points which deserve special attention:-

- i) we are short not just of <u>new</u> graduates. The pace of technical change is now such that regular retraining is needed. It is therefore important that a new programme should in some way take account of the need to update and re-train at least some of our existing engineers people who have already proved they can get things done;
- ii) some people learn their engineering as much by action as in the classroom. Many educationalists still do not understand the importance of activity-related

7.....

learning at all levels (primary, secondary and degree) in terms of students' career prospects and the economy;

- iii) many technologists and technicians don't in fact work in the engineering industry at all; over fifty per cent of them are currently employed outside the engineering industry. The Engineering Industry Training Board cannot deal with the problems involved, because while GEC, for instance, is in the Board's scope, many employers of engineers and technologists (such as ICI, BP, BT and Marks & Spencer) are not. Through the Information Technology Skills Agency, employers are looking for solutions in the creative sense and to practical problems (e.g. the question of some sort of rough and ready code of conduct about poaching while we build up resources). But they need Government support. The recommendation by the House of Lords Science and Technology Committee for a new statutory Education and Training Board would be a good starting point provided it is confined to scarce technological skills;
- iv) difficulty and confusion is caused by the unco-ordinated involvement of several Government departments, national bodies such as the UGC,

1 .....

: 3 : educational institutions and local authorities, all of which enjoy a large degree of independence and have vested interests to protect. The new programme needs single-minded direction by a determined Government. Sir Robert Clayton will attend the meeting on 21st May, so you probably won't need me as well. But may I suggest that Derek Roberts, our Director of Research, attends because he has a particular expertise in this field and will look after the follow up in GEC. Lord Weinstock The Rt. Hon. Mrs. Margaret Thatcher, MP, 10, Downing Street, LONDON, S.W.1. Enc.

## PROGRAMME TO INCREASE GRADUATE ENGINEERS AND TECHNOLOGISTS

## (Prime Minister's Letter of 19th March 1985)

(1) Many of the fundamental problems regarding business skills and employment prospects are referred to in the recently published White Paper, but the context of the overall problem is relevant to GEC's specific comments on the Prime Minister's questions.

## The Problem

- (2) Too few young people master mathematics and science in our primary and secondary schools. It follows that the pool available to train as engineers and technologists at university and the polytechnics is too small to start with; this will be aggravated by the fall of about one third in the number of youngsters in their late 'teens between 1984 and 1990.
- (3) Simply determining new curricula in the schools is no solution. There is a serious shortage of effective teachers, particularly in mathematics. And we do not make the best of what we have because many educationalists do not seem to understand that young people learn in different ways; conventional methods of teaching do not suit everyone. In GEC's experience, some youngsters respond

much better to practical than to formal learning. Young people who, for one reason or another, have rejected (4) conventional education, can learn effectively through activity-based training. The better YTS programmes have enabled the young to understand the real life relevance of subjects like mathematics and physics. The Technical Vocational Education Initiative, the new Certificate of Pre-Vocational Education and the Scottish Education System also encompass such learning styles. Activity-based training should be considered more throughout primary and secondary education in the UK. (5) Of the people who do come through as graduate engineers and technologists, far too many never enter engineering industry or leave it. Some join other manufacturing industry (e.g. ICI and BP) but many go into non-manufacturing companies such as BT and Marks & Spencer (who now recruits engineers but does not train them) and professions such as accountancy and banking. Overall over 50% of technologists and technicians are currently employed outside the engineering industry, which cannot make sense. (6) We have also to recognise that the pace of technical change is now so great that some re-training or extension of expertise is needed for our existing graduate engineers and technologists, possibly as often as every 10 years. Without this we shall not make full use of them throughout their working lives. The UK is slipping behind its competitors in this respect as well as in the provision of - 2 -

new young graduates. It is very important that the Government's new programme should take account of this need. Clearly employers have a responsibility but it should be shared between them and higher education institutions with the Government acting as a catalyst to get things moving, especially in such fields as distance learning and Tutorial Video Instruction programmes.

### Industrial Contribution

make. GEC will, of course, do what it can to help. The answers to her specific questions (i-v on page 2 of her letter), that is the details of equipment, teaching staff, design of courses and career prospects, can be worked out by her officials and GEC managers. A lot is already done. For example, 8 of our staff hold positions as visiting university professors; our central research laboratories teach several under-graduate courses; and the students involved have access to our specialist equipment. And, the technological training carried out in GEC during a 12 month period, amounts to;

New graduates 1,500

Student apprentices 1,800

Technician apprentices 3,000

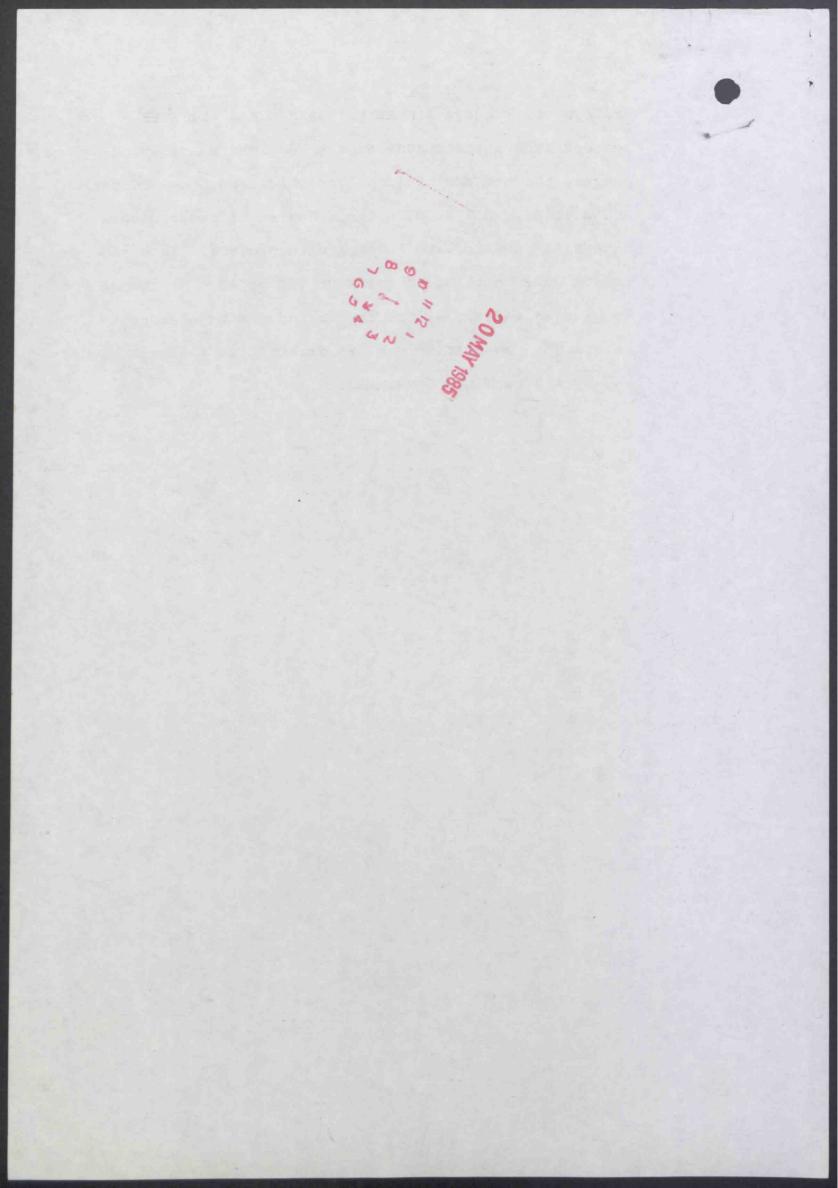
Craft apprentices 2,500

Mature technicians
and technologists 11,000

YTS youngsters, customers employees and overseas employers' staff 8,000 In assessing the contribution industry can make, it is (8) necessary to distinguish between "industry" and particular employers, because a relatively small number of high technology companies are in fact doing the larger part of the UK's high technology training. Most UK companies either cannot or will not train for technological skills and are poaching skilled and experienced people from those who carry the burden of training them. But this minority of companies cannot be expected to cope with this indefinitely and, anyway, they cannot do enough unaided. The costs of training technologists are considerable, and if these businesses are to carry out more training and sponsorship to help overcome a broad national problem, they need financial help. (9) Turning to a on page 2 of the Prime Minister's letter, the key subjects for expansion at universities and polytechnics include electronics engineering, computer science and physics; GEC managers can identify appropriate centres of excellence for officials. It may be necessary to introduce more flexible entry qualifications for science and engineering courses at universities, and the better polytechnics must not be forgotten when extra resources are allocated. Incidentally, the progress of the Open Tech started by one of the Prime Minister's former colleagues has been disappointingly slow. - 4 -

Organisation (10) There are 2 key points on b and c on page 2 of the Prime Minister's letter. (11) Because the Engineering Industry Training Board functions in a sectorial manner (GEC is in its scope but, for example, the other companies mentioned at para. 5 above are not), it cannot be effective either creatively or in dealing with practical problems. Many employers of engineers and technologists do not face the cost pressures applying to engineering industry who operate extensively in export markets and there is a need for a rough and ready code of conduct about poaching in order to minimise any inflationary spiral while we are building up our resources of these people. (12) Through the recently formed Information Technology Skills Agency, high technology employers are now trying to identify solutions. But they need Government support. Perhaps the recommendation made by the House of Lords Science and Technology Committee for the setting up of a statutory scarce technological skills education and training board offers a constructive starting point and a way out of the problem with the EITB. (13) Still more difficulties and confusion are caused by the unco-ordinated involvement of several Government departments and bodies in the scarce technological skills area, including the Departments of Education & Science, - 5 -

Employment, Trade & Industry, the MSC and the EITB, besides such institutions as the UGC, the examination boards, the universities, polytechnics and Local Education Authorities. All enjoy a large degree of independence, have axes to grind and interests to protect. This confusion will continue to restrict the process of change and to have an adverse affect on our industrial advance, unless the new initiatives are directed in a single-minded way by a determined Government.



Sitelfile vi. More generous tax concessions on donations of equipment to educational establishments - such as they have in the U.S.would encourage industrialists to do a great deal more. There are, of course, provisions in UK tax law for relief on business Response: donations made for technical education, as well for the sponsorship of students. Remember, tax systems must be looked at in the Precuse round: it is very misleading to cite a particular tax relief in another country, in isolation from its overall context. 6412 vii. There should be earmarking of funds for engineering departments in higher education institutions. Response: The UGC have already expressed to universities their dissatisfaction with the level of funding for engineering departments and 1981 UGC ut did expect the position to improve. In the public sector the case have some advence for improving the relative weighting factor for engineering courses impact on dec. eng. is under consideration. We have explicitly rejected the suggestion more responsible of earmarking at this stage, not least on the grounds that it would answer needed? have unacceptable institutional side effects and the problem can be tackled in other ways. viii. Present shift towards science and technology in higher education is not enough. Response: The Government is continuing to advocate further moves towards science and technology within universities and the public sector and we will be stressing this in our forthcoming Green Paper on Higher Education. Such changes cannot, however, be made speedly without substantial additional resources: engineering provision is considerably more expensive than arts provision. And remember, there is no point in providing places in higher education unless sufficient school leavers come forward with A levels in Maths and Physics.

form of: (a) Equipment (b) Teaching Staff - this is vital because university salaries are not competitive and, unless industry helps, the planned increase in graduate output may not be achieveable. (c) Placements for students on sandwich courses. (d) Active help with the design of courses. (e) A readiness to offer worthwhile initial jobs and subsequent careers to the graduates. [These points were listed in paragraph 3 of the Prime Minister's letter of 19 March and those present should be ready to respond.] The Government hopes that all the firms represented The stronger the response from will agree to help. If the response from industry is strong, induly, the greater will be the momentum of the change in the change in higher education will gather momentum. higher education If the response is weak, the Government will conclude that the switch does not deserve the priority that the RB: mut Engineering Council and John Butcher's Committee recommended for it. 7

S R AUSTIN PEARCE British Aerospace plc

MR. M. BETT British Telecom plc

MR. ROBERT THORNTON Debenhams plc

MR. J.D. ALUN-JONES Ferranti plc

MR. S. TOY Ford Motor Co. Ltd.

MR. R.J. CLAYTON GEC

MR. DEREK ROBERTS GEC

SIR AUSTIN BIDE Glaxo Group Ltd.

MR. D.A. BALDWIN Hewlett-Packard Ltd.

SIR EDWIN NIXON
IBM(UK) Holdings Ltd.

MR. J.H. HARVEY-JONES
Imperial Chemical Industries plc

MR. P.A.B. HUGHES Logica Holdings plc

MR. R.G.C. MESSERVY Lucas Industries plc

THE VISCOUNT SANDON National Westminster Bank plc

SIR JOHN CLARK
The Plessey Company plc

SIR ERNEST HARRISON Racal Electronics plc

MR. H. ORR-EWING Rank Xerox Ltd.

SIR ROY SISSON Smiths Industries plc

SIR KENNETH CORFIELD STC PLC

MR. P. SWINSTEAD Systems Designers Ltd.

Mr. P. LAISTER Thorn EMI plc MR. R.E. OTIGER TI Group plc

SIR TERENCE BECKETT

SIR ROBERT CLAYTON
Information Technology Skills Agency

SIR FRANCIS TOMBS RothschildsRolls Royce

MR. ROBIN DUTHIE Scottish Development Agency

Mr. J.S. WHYTE National Electronics Council

RT. HON. SIR KEITH JOSEPH, MP

RT. HON. NORMAN TEBBIT, MP

RT. HON. TOM KING, MP

RT. HON. LORD YOUNG OF GRAFFHAM

RT. HON. GEORGE YOUNGER, MP

MR. JOHN BUTCHER, MP

SIR ROBIN NICHOLSON

MR. P. .. WARRY

MR. J. WIGGINS





### 10 DOWNING STREET

From the Private Secretary

17 May 1985

Der Elizatet

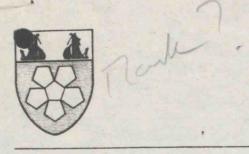
I spoke to Robin Retsima this morning, and agreed to send him the attached letters from Rank Xerox and Hewlett-Packard which arrived yesterday. Could you please pass them on to him.

Copies of this letter and the attachments go to the Private Secretaries to the Secretary of State for Energy, Scotland, Wales, Employment, Trade & Industry, Minister without Portfolio, Parliamentary Under Secretary of State for Industry, and to Sir Robin Nicholson, John Wiggins (Cabinet Office) and Oliver Letwin (Policy Unit, No.10). Also enclosed, for those who have not already seen them, are copies of earlier letters from Lord Weinstock, Sir Austin Pearce, Mr. A. Poot and Sir William Barlow.

L N Mall Addwar

Mark Addison

Miss Elizabeth Hodkinson, Department of Education and Science.



# Polytechnic of the South Bank

Pl.p.c.or swhe fle

With the Compliments of The Deputy Director

Borough Road London SE1 OAA Telephone 01-928 8989

POLYTECHNIC OF THE SOUTH BANK MEMORANDUM THE PRIME MINISTER SIR ROBERT CLAYTON/ SIR KEITH JOSEPH Copies for information to... Date 17th May 1985 From The Deputy Director Meeting with Industrialists on 21st May to discuss the DES Ref. £43 million Engineering and Technology Programme Preliminary There is no university or polytechnic in the country which can match our achievement in boosting engineering enrolments over the past five years. So it is surprising that no one has consulted us or NAB about the 'switch'! Problem The output of graduates in high technology disciplines is not keeping pace with the expanding needs of industry (Chancellor of the Exchequer, announcing the £43million programme in his Budget speech). Analysis In the longer term we need to increase the number of students taking Mathematics/Physics/Computer Science etc. in the 6th Form. Meanwhile we need to persuade a higher proportion of existing sixth formers to enrol on certain courses, including Electronic Engineering and Computer Science. Solution Lots of students of subjects such as Business Studies or Economics have the 'A' level qualifications needed for entry to engineering courses. UCCA and similar statistics confirm this. We need to persuade more sixth formers with the right 'A' levels to try an Engineering degree course. Ask Sir Keith Joseph to revise the 'Mandatory Awards' legislation so that suitably qualified sixth formers can have a go at certain engineering courses without losing their rights to a student grant if they decide to change their minds and switch to another course later. Then mount a publicity drive to ensure that the message gets through to careers advisers and students that certain engineering courses carry a valuable 'double option' in terms of mandatory award entitlement. Results Changing the mandatory award regulations might increase enrolments by 10% . The extra cost of student grants to students who change their minds after say one year could be a premium worth paying - and they will be 'more technological' even if they end up as accountants! P.S. Perhaps part of the £43m should be earmarked to teach civil servants the difference between a 'switch' (as in Social Science -> Technology) and a 'syphon' (as in Polytechnic -> University) - the actions taken so far will simply waste money tempting potential students and hard won staff from Polytechnics like South Bank to the Universities with which it competes!

W0403

MR ADDISON

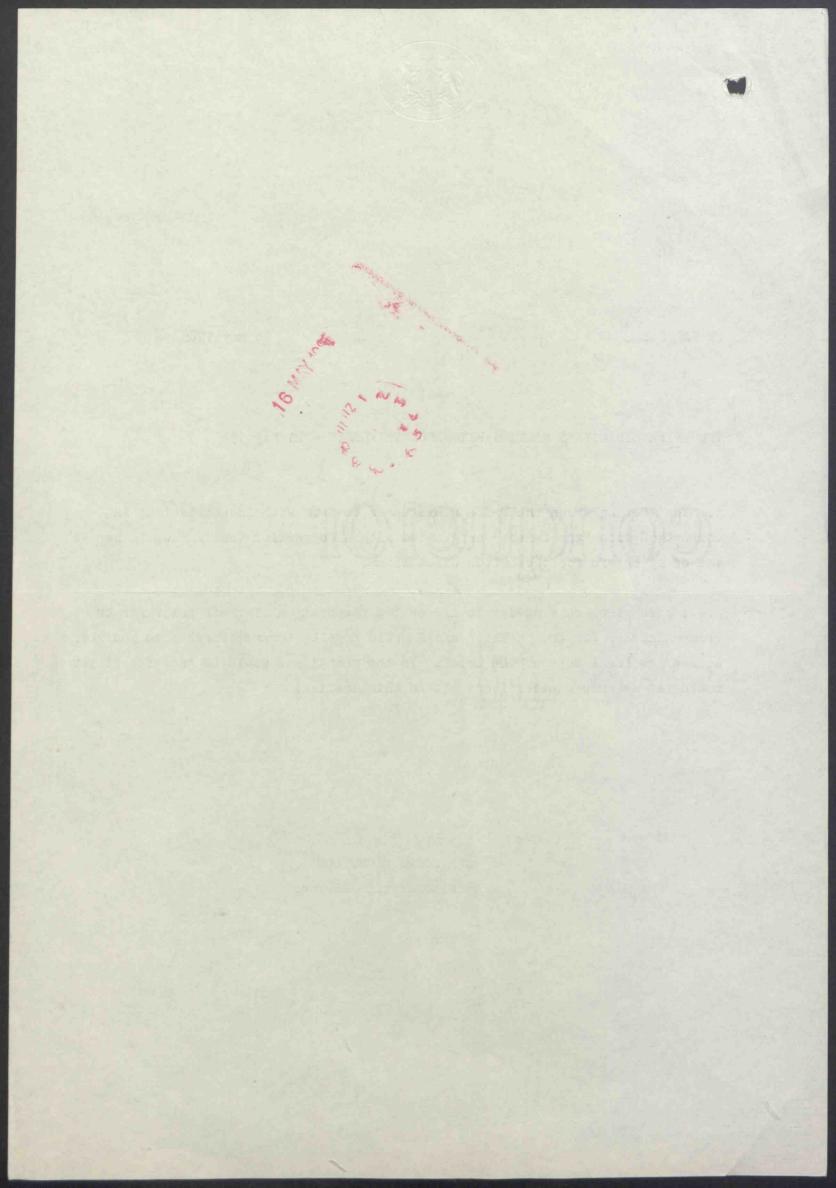
16 May 1985

THE PRIME MINISTER'S MEETING WITH INDUSTRIALISTS - 21 May 1985

- 1. The meeting which the Prime Minister is to have with industrialists in connection with "the Switch" originated with a suggestion that I made to her in one of my briefs for the Switch discussions.
- 2. I have given some advice to DES on the preparation of their brief for the Prime Minister for the occasion and I would hope to comment further to you when we see the final copy of the brief. In the meantime I would be grateful if you could let me know whether I can attend this meeting.

PP SIR ROBIN NICHOLSON Vane Va

Chief Scientific Adviser



Prine Mirister D You are meeting adustichists to discum the "Switch" on Therday, Six Keint would Wie to low colleges greenent that the best poly kehing sterid be unded a de programe before that mety. Conter? PRIME MINISTER ENGINEERING AND TECHNOLOGY PROGRAMME We agree with Keith Joseph that it would be sensible to include the best polytechnics in the new Programme for engineering and technology. Our contacts lead us to believe that the exclusion of the polytechnics has caused considerable industrial and local authority resentment; and some of the best departments in these applied fields are said to offer more industrially useful courses than many of their university counterparts. We recommend that you should accept Keith's recommendation.

PETER WARRY

OLIVER LETWIN

PM what.

MEH 20/5



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### DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE YORK ROAD LONDON SEI 7PH TELEPHONE 01-934 9000

FROM THE SECRETARY OF STATE

The Rt Hon Norman Tebbit MP Secretary of State for Trade and Industry 1-19 Victoria Street LONDON SW1 139M

14 May 1985

den Nomen

ENGINEERING & TECHNOLOGY PROGRAMME

P2 wow HEA.

I wrote to you and other colleagues on 8 March setting out proposals for the first phase of this Programme and, following general agreement, an announcement was made shortly before Easter. You had earlier raised the question of possible public sector involvement in the Programme and I therefore proposed in my letter to seek advice as to whether industry would support such involvement from Sir Robert Clayton and members of the IT Skills Agency.

I consequently met Sir Robert and members he selected from the Agency on 7 May. In your absence, John Butcher attended from your Department. As you may already have heard from him, Sir Robert Clayton and his colleagues gave clear and unequivocal advice to the effect that they would see merit in a small number of polytechnics with strong departments receiving a relatively small proportion of the resources still remaining for this Programme - even though this would necessarily be at the expense of some provision in the universities. Beyond that, there were different views on some issues, but they tended to believe that the emphasis for the remainder of the programme should be on quality of provision and not on achieving the maximum numbers at minimum cost (though they recognised that both quality and cost-effectiveness were important factors to be taken into account). They also favoured general rather than highly specialised first degree courses. They did not exclude the possibility of assistance under the Programme for the separate initiatives at Salford and Cranfield and saw merit, prima facie, in the type of novel distance learning techniques being adopted at the Open University. As you know, these are all proposals before us for the second phase of the Programme and I therefore accepted readily Sir Robert Clayton's offer to supply early further advice both on centres of strength in the public sector and on these other proposals.

This advice does, of course, mark a departure from the earlier advice by the Engineering Council. In a separate meeting with me recently the retiring Chairman, Sir Kenneth Corfield, and the Director had the opportunity to amend their earlier advice, but, while recognising the sensitivity of the public sector question, they did not offer a clear line on it. In the circumstances, I believe it would now be proper to act upon the clear message we have received from Sir Robert Clayton and his colleagues – a message I would expect to hear repeated when the Prime Minister meets industrialists later this month. And in view of the speculation this issue has aroused, I plan to make known publicly, through a low key announcement, on which I will consult you and relevant colleagues, our general intention to include some public sector institutions in the Programme. I shall assume you and other colleagues will be content unless I hear to the contrary by Tuesday 21 May.

Officials and a representative of the ITSA are meeting, as you will know, to develop proposals for later stages of this Programme. They will clearly have to offer us a package which leaves room for good universities, well-supported by industry as well as the polytechnics and other special cases. Separate procedures involving the National Advisory Body will be needed to handle the public sector involvement and I am asking officials to put in hand the necessary groundwork to enable bids to be invited from institutions once we have guidance from Sir Robert Clayton and his colleagues on the course areas where he feels polytechnics can offer particular strength. I shall make further proposals to you and others in due course about the remainder of the Programme (including on the sum of resources to be committed to the public sector).

I might remind colleagues that the Prime Minister's meeting with employers on 21 May will concentrate on their contribution in cash and kind to favoured educational institutions.

Copies of this letter go to the Prime Minister, the Chancellor of the Exchequer, the Secretaries of State for Defence, Employment, Scotland and Wales, the Minister without Portfolio, the Chief Secretary to the Treasury, Sir Robert Armstrong and Sir Robin Nicholson.

Cum,

Science + Tech fr3
Budget 8861 YAM 41

Office of the Chairman

Rank Xerox Limited 338 Euston Road London NW1 3BH Telephone 01 380 8000

**RANK XEROX** 

The Office of the Prime Minister, 10, Downing Street, Q2 areded London SW1

14th May, 1985

Dear Sir.

In my letter of 27th March, 1985 responding to the Prime Minister's invitation to the meeting on 21st May, 1985, I undertook to provide some data on Rank Xerox initiatives which contribute to the cause of engineering.

As an aide-memoire Rank Xerox is a British Company whose controlling Shareholder is Xerox Corporation of Stamford, Connecticut. Rank Xerox Revenue is £1765 million and profit before tax is £202 million. We employ 31,000 people of whom approximately 8000 work in the U.K.

Rank Xerox has recognised the shortage of skilled people in its own field of technology - I.T. - and last November launched a programme to address this problem and highlight the consequences to the industry if proper remedies are not found. The initiatives we have announced are in a variety of areas.

In November of last year our parent corporation donated Equipment

£700,000 of 'Leading Edge' computing equipment to Cambridge University and, this year, we will be adding a

further £200,000 in software.

We have endowed a Chair in Information Technology at Teaching

the University of Hull and will also be establishing

Fellowships with two professional bodies in London.

We are actively discussing the secondment of one of our Secondments

top engineers to an I.T. Fellowship at Aston University. We also have an extensive placement scheme for Brunel

University students on sandwich courses.

We have already given some advice in respect of new Course Design

courses and are supporting the Warwick University Science project concerned with developing a new basic

science curriculum for U.K. schools.



We are in close contact with I.T.S.A. and, in addition, we have already identified six centres of excellence in I.T. with whom we shall be working.

In order to stress the importance of skills training, Rank Xerox sponsored Innovation '85 at Cranfield. This was a combination of a careers exhibition, trade show and technical seminar over a period of six days. The exhibition was opened by John Butcher and supported by the CBI, the Armed Services and several universities. Twenty-three other companies in the industry participated. Over 20,000 invited guests, a mixture of industrialists, students and academics attended.

At a more basic level, RX has established two Information Technology Centres (ITeCs), one at Slough (investment £250,000) and another at St. Helen's together with Pilkingtons. We have now almost two hundred young people under Y.T.S., most of whom receive training in I.T. skills and, as a company, have a residential training school at Newport Pagnell, catering for a wide variety of our internal needs from sales training and technical training to management development. In addition, we work closely with the teaching profession through the U.B.I. programme to ensure that we and the profession understand each other's needs.

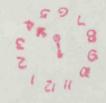
These activities in total means that Rank Xerox Ltd. will spend in the UK over £3 million pounds externally with schools and universities over the next three years in helping to bridge the I.T. skills gap.

We have a concern, which is that, the £43 million allocated by the DES is used by the universities as incremental to the funds already devoted to Engineering Education. Could there be a risk that whilst these funds are earmarked for engineering, a similar sum might be released to cross-subsidise other university activities, thus leaving the engineering spend unchanged in total? An assurance by the Secretary of State at the meeting that this will not happen would be most welcome.

Yours faithfully,

H. Orr-Ewing

Science + Teal 173 Budget



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RANK XEROX



# INTERNATIONAL REPORT 1985

Rank Xerox is a leading supplier of office equipment in over 80 countries in the Eastern Hemisphere. Five factories in Europe and four factories in Japan produce the widest range of copiers and duplicators in the industry.

A comprehensive range of office information products – ranging from electronic typewriters to laser printers and integrated communications systems – is developed by our parent company, Xerox Corporation, in the US, and manufactured in Europe, the US and Japan. Rank Xerox has one of the largest sales and service organisations in any industry, operating in 24 marketing subsidiaries and complemented by numerous distributors, agents and dealers.

The wonder of the microchip, as featured in the new corporate advertising campaign on television showing the total capability of Rank Xerox. (See P18).



#### CONTENTS Page No A YEAR OF CHANGE AND PROGRESS Rank Xerox placed a record number of copiers and duplicators, improved its market share, strengthened its leadership position in office information systems and increased its profits by 22 per cent. The Chairman and Managing Director also forecast higher profits in 1985 subject to exchange rate effects. 2 THE NEW MANAGEMENT STRUCTURE There was a major reorganisation at International Headquarters with the aims of establishing clearer accountability, implementing decisions more rapidly and 3 **HIGHLIGHTS OF 1984 PERFORMANCE** 1984 at a glance showing the company's performance financially and in the market place and how it responded to its social responsibility. 4-5-6 **OPERATIONAL REVIEW** 1984 performance in each major area of the business is reviewed together with a preview of what is planned in 1985. FINANCIAL REPORT A commentary of Rank Xerox results in 1984. ALTERNATIVE DISTRIBUTION -8-9 FRANCE LEADS THE WAY Rank Xerox operations in France include the operating company which is leading the way in setting up additional distribution methods to widen market coverage of copiers and electronic typewriters more cost effectively, and the factory at Lille where output of electronic typewriters more than doubled and assembly of Xerox 1075s began. 10-11 THE NETHERLANDS - 100,000 SUCCESSES There was a smart turnaround in revenues and profits of Rank Xerox in the Netherlands with net placements of copiers up by a third reflecting the success of the 10 Series in a year in which the Xerox factory at Venray produced its 100,000th model of the Xerox 1045 12-13 QUALITY PAYS OFF IN THE UK Our marketing company in the UK has set up a network of joint venture dealers known as Xerox Business Centres and initiated a major information technology programme. The factory at Mitcheldean was the winner of the first British 14-15 **INTERNATIONAL SUCCESSES** Our joint venture in India, Modi Xerox, was successfully launched on the stock market ahead of the factory's first commercial production of Xerox 1045s. This section also looks at distribution in East and Central Africa and the biggest worldwide installation of Ethernet in Australia. 16 FUJI XEROX - CONSISTENT GROWTH The Total Quality Control programme is one of the key reasons for the rapid growth at Fuji Xerox in Japan whose sales have grown at a compound annual rate of 16.5 per cent over the past five years. 17 LEARNING IS BETTER THAN TRAINING About 60 per cent of the time we spend at training school is spent acquiring knowledge - the rest is spent acquiring skills. Rank Xerox is introducing an Active Learning Process to help us acquire knowledge on our own. 18-19 THE MAKING OF AN IMAGE A major corporate identity advertising campaign is being launched internationally to promote Team Xerox - the full panoply of our capability. 20 RANK XEROX IN THE COMMUNITY Rank Xerox donated £1.4 million in 1984 as part of its portfolio of social actions in which substantial support is provided to local communities and international

# A YEAR OF CHANGE AND PROGRESS —

In the year ended October 31 1984 Rank Xerox placed a record number of copiers and duplicators, increased its market share significantly in the crucial mid-volume sector, reinforced its leadership position in the office information systems market, and increased profits before taxation, for the first time in five years.

1984 may well be recorded as a watershed in the company's history. The tide has turned, after several years of declining profits and market share. But there still is a great deal to do to ensure that the recovery continues.

1984 was the first full year of the 10 Series, the third generation of xerographic copiers and duplicators that has set new industry standards of copy quality, reliability, features and value for money. All of our expectations have been met, and more. No less than 75 per cent of total gross installations were 10 Series machines. In particular, the Xerox 1045, designed in the UK and manufactured in the Netherlands, has been a success all over the world, including North America with over 100,000 placements in the mid-volume sector. Further successes can be expected with the recent launches of other products in this sector.

At the same time, our drive into the low-volume sector, with the Xerox 1020 and Xerox 1030 family, is producing encouraging results, particularly through the additional distribution channels described in this report. The Xerox 1075 and Xerox 9000 Printing Series are maintaining our stronghold in the high speed duplicating sectors. These successes are reflected in an 18 per cent rise in total copier

net placements during the year.

Our Systems Business Division, responsible for marketing the fullest range of office information systems available from any company, including laser printers and multi-function workstations, achieved a revenue increase of 54 per cent. Placements of electronic typewriters made in France more than doubled, as did revenues from electronic printing systems. SBD accounted for over 10 per cent of the company's total revenue and is well on its target of providing half the total turnover by 1990.

Our financial results show revenues of £1,765 million,

up by 15 per cent, and profits before taxation (and before our share of Xerox research and development and central overhead costs) of £202 million, up by 22 per cent.

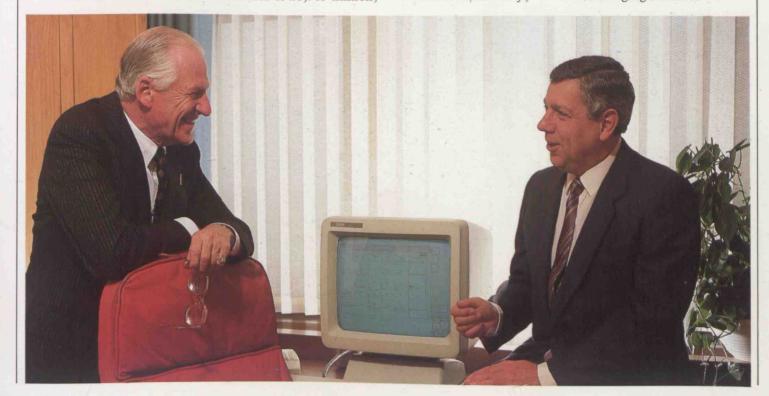
These results were achieved in an environment of slow economic growth in many of the Eastern Hemisphere countries, our copy volume growth of 7 per cent, and higher costs of components and machines sourced in the US and Japan resulting from the strength of the dollar and the ven.

However, despite these encouraging results, we have no grounds for complacency. Rank Xerox is facing strong competition, depressed industry price levels, adverse currency influences and an uncertain economic environment. The key to our continued success is to establish even higher levels of activity at the same time as continuing to reduce costs.

During 1984 the number of our employees fell by 805 to 30,986 as we retrained a significant number of our people to meet the changing skills base needed by the company, and allowed attrition to reduce overall numbers. We are re-organising International Headquarters. The new structure shown on the next page will result in fewer management layers, faster decisions, more line accountability, and lower central costs. In addition, we have made plans to move Headquarters out of London to Marlow in late 1986 at a substantial cost saving.

Rank Xerox has had considerable success in reducing its costs and these efforts will continue in order to retain our competitiveness. At the same time, we expect an even higher level of net placements in both areas of the business in 1985. Whilst continuing to expand, SBD is expected to contribute profits for the first time, after eight years of investments. These factors make us confident in predicting higher profits in 1985, subject to exchange rate effects.

H. Orr-Ewing Chairman (shown left) R. E. G. Magnin Managing Director



# THE NEW MANAGEMENT STRUCTURE

uring 1984 a major reorganisation of the structure of our International Headquarters was carried out with the aims of establishing clearer accountability, implementing decisions more rapidly, and cutting

### **New Operational Team**

The responsibilities of the Regional Directors were redefined in order to clarify accountability. Each is now directly accountable not only for the results of the Operating Companies which report to them but also for their staff support teams in International Headquarters.

In addition, to assist in reducing the number of lavers involved in decision making, the General Managers of our three largest Operating Companies now report directly to the Group Managing Director.

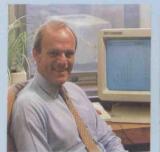
As a result of these changes there is now an operational team with clear and direct accountability for the achievement of business results.

#### Changes in International Headquarters

Changes were also made in all of the functions in International Headquarters in order to support this new emphasis. Wherever possible the number of management layers is being reduced and accountabilities are being clarified.

A significant development was the establishment of a new Rank Xerox Services Group which will be responsible for the provision and co-ordination of all central services for the UK operating company, Manufacturing and Engineering and for Headquarters, including external relations in the UK and social responsibility programmes, and for shared development, logistics, and Bushey computer operations, which are organisation should ensure that

# The people responsible for our operations



Coast, East and Central

Africa.





LUIS CAMINO Regional Director responsible for Spain, Portugal, Sweden, Holland, Switzerland, Austria, Belgium, Denmark, Norway and Finland



**DAVID THOMPSON** Regional Director responsible for Italy, Middle East, North Africa, India and Eastern Europe.



**BERNARD FOURNIER DON WILSON** General Manager UK and General Manager France. Ireland



MICHEL ODELGA General Manager Germany.

supporting many of the operating authority is devolved to the most The Head Office move to Marlow made and implemented as speedily as

planned for late 1986, will also be one of possible. the key accountabilities of this Group.

These fundamental changes in our

appropriate level and that decisions are

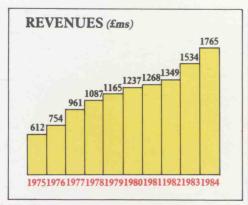
Model of the new International Headquarters being built at Marlow

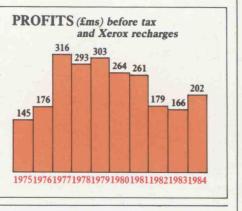


# HIGHLIGHTS OF 1984 PERFORMANCE

# **FINANCIAL PERFORMANCE**

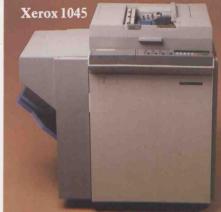
- Revenues £1,765 million, up by 15 per cent
- Profits, before tax and Xerox recharges, increased by 22 per cent to £202 million





# **PRODUCTS**

- 10 Series products well received by customers and provided 75 per cent of gross installations
- Over 100,000 worldwide placements of Xerox 1045s
- Xerox 9000 Printing Series re-launched
- Doubled placements of electronic typewriters

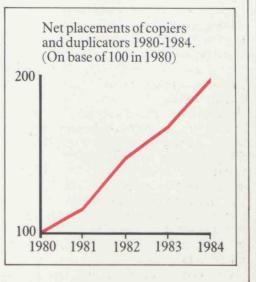




# **OPERATIONS**

- Record net placement of copiers and duplicators (18 per cent up on 1983)
- Market share improved
- Copy volume increased by 7 per cent
- New marketing channels established for low volume products
- Service and Distribution revenues grew by 16 per cent
- Record placements of SBD products with revenues up by 54 per cent
- More than doubled revenues from electronic printing, typewriters and office systems

- Quality improved by 89 per cent in Manufacturing
- Mitcheldean won British Quality Award



# **SOCIAL RESPONSIBILITY**

- £1.4 million provided by International Headquarters and Operating Companies to support local communities and international projects
- Job creation programme sponsored in the Netherlands
- Mitcheldean Enterprise Workshops opened in November
- Chair in International Management established at INSEAD in Fontainebleu, France

Bryan Nicholson appointed chairman, Manpower Services Commission in UK

# **EMPLOYMENT**

- Group employees 30,986, a reduction of 805
- International Headquarters restructured and to move to Marlow in late 1986
- Active Learning Process launched

# OPERATIONAL REVIEW

n placing a record number of copiers and duplicators in the market place Lduring the year ended October 31, 1984 Rank Xerox increased market shares in most sectors, thus strengthening its leadership position. Net placements of machines rose by 18 per cent over the previous year, backed by vigorous marketing and advertising. Despite some supply constraint, no fewer than 75 per cent of gross installations were 10 Series machines, reflecting strong customer acceptance of what is widely regarded as the industry's stateof-the-art products. The four basic models making up the third generation of xerographic products and launched in Improved Results from Service April 1983 exceeded expectations and and Distribution achieved a turnround in the company's In achieving a revenue increase of 16 per market share. The four products cent, Service and Distribution straddle the entire range of the market, accounted for nearly a fifth of total up to high speed duplicating. Their revenues, reflecting the growing modular construction allows customers importance of this side of the business. to mix-and-match to get the right model to meet their exact copying needs. Two more 10 Series products were introduced during 1984, and further product intro- taneously measuring customer satisductions are planned for 1985.

reprographic machines, including laser printers, recovered following several years of low growth reflecting lower been placed at local levels has resulted in economic activity in the Eastern Hemis- improved customer satisfaction, service phere. The increase in copy volume profitability and job satisfaction. during the year was 7 per cent.

As part of the vigorous marketing Systems Business Booms drive, there was a major move to estab- The Systems Business Division achieved were the setting up of joint ventures and concessionaire systems in the UK and France. Other types of alternative distribution channels have also been initiated, such as the sales agent networks.

### Xerox 9000 Printing Series

The Centralised Business Area (CBA) has shown continuous success with a strong performance from the lead group revenues by 1990. product, the Xerox 9500.

The series was successfully reproducts into high-volume, centralised more integrated strategy in document environments. The launch included special salesforce training, a customer we intend to be a fully integrated systems seminar programme and a customer company. The investments in Systems satisfaction drive. The Xerox 1075 was especially well placed in the medium to off, with the first profit expected in high volume decentralised areas.



Assembly of Xerox 1075s at Lille.

There was a major effort in 1984 to devolve decision making within TSD to a level nearer to the customer. By simulfaction and service profit margins, TSD Copy volume on all Rank Xerox staff have been encouraged to make their own business judgements. The greater flexibility and responsibility which has

lish new distribution channels and a revenue increase of 54 per cent during concentrate the efforts of the direct sales 1984. Most sectors reported an enforce. In addition to the appointment of couraging growth rate, with electronic many new dealers, two exciting new printing, electronic typewriters and marketing developments during the year office systems more than doubling revenues. However, results for the Xerox 16/8 micro-computer were not up to expectations.

The Systems Business Division is the major growth area in the company. In 1984 it produced over 10 per cent of the total revenue, and by 1986 the percentage is expected to almost double, in line with the target to contribute half total

SBD Director Carlos Pascual says, "We are now in a much better position, launched as the 9000 Printing Series, with a strong organisation, a better with the aim of repositioning these understanding of the business, and a management. By the end of this decade, Business Division are beginning to pay

Xerox Office Systems designed to improve productivity in the office and technical environments, will be launched in 1985. It offers a wider range of facilities and services than any other system on the market.

Based on the Ethernet local area network, Xerox Office Systems integrates a whole range of Xerox workstations, including personal computers, word processors, multifunctional workstations such as the Xerox 8010 and laser printers. IBM PC's and DEC VAX minicomputers can also be attached directly to the network, and use the services that the system provides. These services include:

- filing and mailing for bulk information storage and distribution

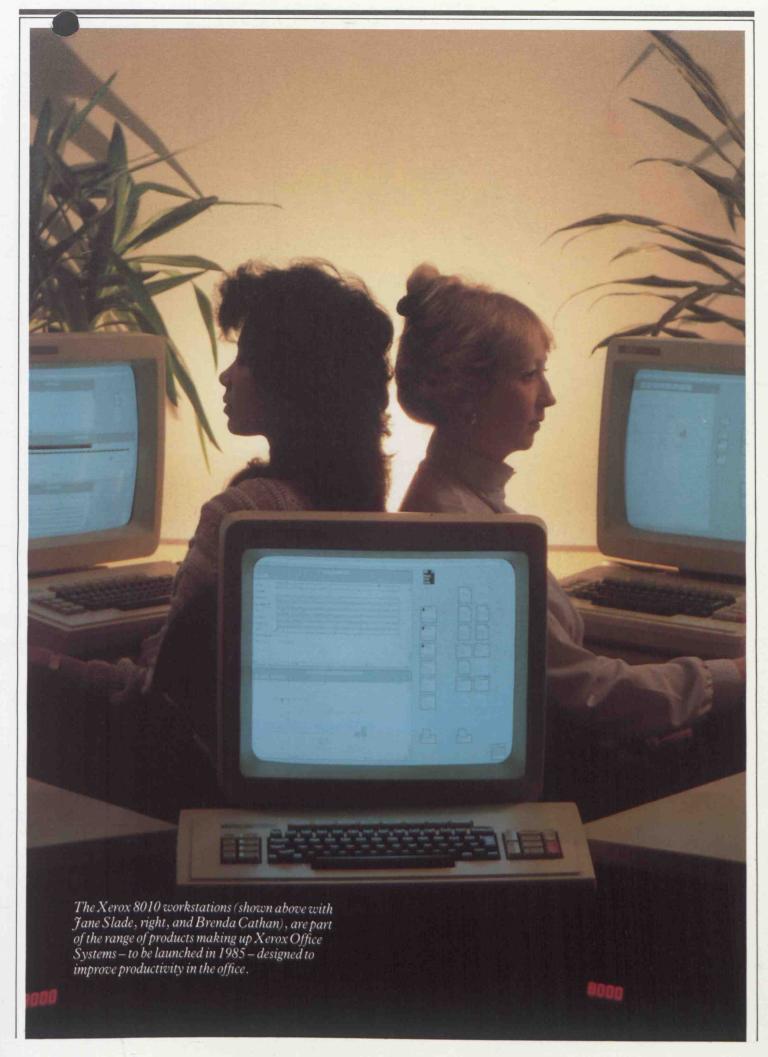
data capture and printing, for converting information into electronic form, and obtaining high quality output

communications, for linking to other networks and existing data processing facilities.

By applying modern technology to document creation and management, Xerox Office Systems provides customers with specific facilities in the document management area that can result in tangible financial benefits. A department involved with publications such as technical manuals or training handbooks no longer needs to get involved with retyping material, cutting and pasting, typesetting, photography and platemaking. The whole development and production process can now be managed electronically, with dramatic cost savings and productivity benefits.

Placements of electronic printing systems have increased from 13 in 1981 to many hundreds in 1984, and a significant profits increase is anticipated in 1985. To keep up with expansion, the sales force has increased sevenfold in three years. Training staff at International Headquarters in London are fully occupied every working day of the year training the sales and service force from throughout the world. Four new electronic printers will be introduced in 1985 - two for centralised and two for decentralised locations. With the introduction of these new products, Rank Xerox will have reinforced its leadership

Rank Xerox is beginning to capitalise on the vast printing industry. An increasing number of manuscripts and manuals are now printed on electronic systems. As we know, printing is only one part of the publishing exercise, accounting for perhaps only one-tenth of the total cost. The preparation of the



manuscript accounts for most of the cost and the use of sophisticated software packages in conjunction with electronic printing systems can help to reduce time, cost, and improve efficiency.

Large corporations, government departments, local government and service industries all have wide varieties of documents which are required urgently, on time and to a high standard of quality.

Xerox software, such as the Xerox Integrated Composition System (XICS), together with the Xerox 150 scanner, is able to create text and graphics which are then reproduced by a high volume laser printer. In Europe a number of high technology companies are currently using these combinations to produce, for example, technical manuals. These types of installations will continue to grow at a high rate.

Supplies - The Diamond Standard

Office Supplies Division increased profits by 17 per cent, with particularly impressive results from the copy shops. Rank Xerox is being established as a major name in the office supplies business and is selling supplies for competitors' machines too. The division's products are being marketed under the concept of the Diamond Standard, to emphasise their high quality.

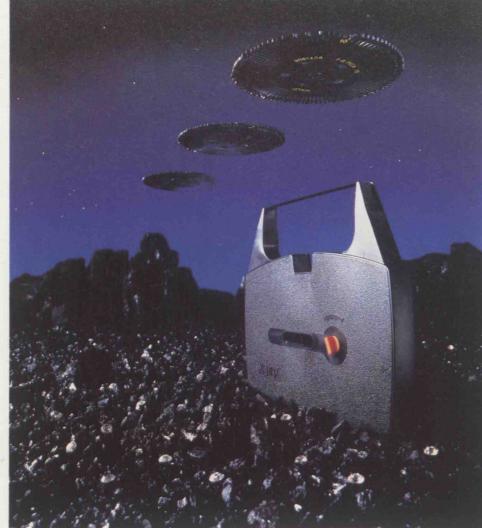
In 1985 OSD will be consolidating the aim of becoming a known supplier of office equipment outside Rank Xerox. There will be particular emphasis on developing sales of new applications materials, such as optical character recognition paper, security paper and envelopes for use with electronic printers.

Productivity in Manufacturing

In 1984, the European Manufacturing and Supply Division met its production schedule, in total and by line, at all of its am confident that based on the last six plants in Welwyn Garden City, Mitchel- years' record of success, we will find our dean, Lille, Venray and Coslada - and with an overall quality improvement of 89 per cent, as measured by the number of defects per 100 machines.

This increase in quality was achieved by continuing emphasis on training, parts control (including closer liaison with parts vendors) and a general insistence on quality from top management to shop floor.

In all plants, the principle of contract labour has been adopted to achieve the maximum degree of flexibility. As our production efficiency continues to improve, we are also investigating the



For the office of the future: Xerox ribbons and printwheels.

contracts for other companies in electronics, photo-receptor production, machining and related fields

The Director of EMSD, Dick Holmes, says, "Our plan for 1985 and 1986 was enthusiastically received. However, subsequent events, including the continued strengthening of the US dollar, have increased future difficulties. The job for 1985 will be very hard, but I way through it".

Leadership Through Quality

"Xerox is a quality company. Quality is the basic business principle for Xerox. Quality means providing our external and internal customers with innovative products and services that fully satisfy their requirements. Quality improvement is the job of every Xerox employee."

In 1984 we began to implement a total quality process for Rank Xerox, the strategy for which was developed during possibility of carrying out production 1983 by a senior management team reward people.

drawn from all the major units of Xerox. "Leadership Through Quality" is a long-term process aimed at changing the way we make decisions, the way we interact with one another, and the way we satisfy our customers.

The implementation of Leadership Through Quality commences with training; over the next three years, each and every person in Rank Xerox will receive formal training in the processes and tools of Leadership Through Quality. The training has started at the top of the organisation and is being cascaded in 'family groups"

Directors of Quality have already been appointed in all units. They will provide quality improvement through training in, and application of, new skills and processes, and also by supporting the development of improved communication processes, increased employee involvement activities, and modifications to the way we recognize and

# FINANCIAL REPORT: Profits Up =

ank Xerox revenues for the year to October 31, 1984 rose by 15 per cent to £1,765 million. Profits before tax and before Xerox corporate charges, amounted to £202 million against £166 million for 1983, an increase of 22 per cent.

Fuji Xerox contributed £55 million to our profits before tax, an increase of 35 per cent, helped by the strength in the value of the ven.

The Rank Xerox contribution to the research and development and central costs of Xerox was £81 million.

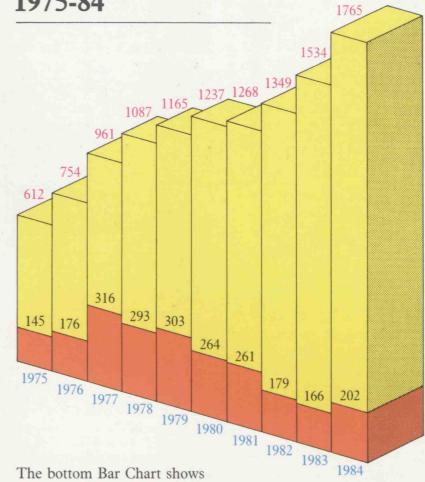
After this charge, profits before tax were £121 million. Income taxes payable to governments amounted to £37 million. We are paying dividends to our shareholders, Xerox and the Rank Organisation of nearly £19 million. Outside shareholders are allocated £1 million. This has left £64 million retained in the business for investment.

Our contribution to profits before tax of The Rank Organisation amounted to £64 million.

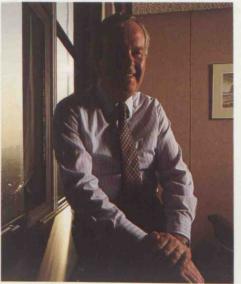
While The Rank Organisation consolidates approximately one-third of our profits, Xerox Corporation, which owns 51.2 per cent of Rank Xerox companies, includes the balance of our profits calculated in dollars in their results.

The 1984 Rank Xerox results in dollars were adversely affected by the strengthening of the dollar against other currencies. This is reflected in revenues of \$2,432 million, up by 3 per cent, and profits before taxes and before our contribution to Xerox research and development costs and central overheads, of \$271 million, down by 3 per cent.

**RANK XEROX REVENUES AND PROFITS** IN £ STERLING (MILLIONS) 1975-84



The bottom Bar Chart shows Rank Xerox profits before tax and before our share of Xerox research and development and central overhead costs.



Jack Milligan, Director of Finance and Control at International Headquarters, London.

# **RESEAU INDIRECT -**LA FRANCE OUVRE LA VOIE

ix - neuf cent quatre - vingt quatre a été une bonne année commerciale pour Rank Xerox France," affirme Bernard Fournier, Président Directeur Général, "avec un accroissement de 25% des placements machines par rapport à l'année précédente, et une augmentation du revenue de 17%. Notre part de marché copieur s'est accrue de façon significative, en raison du succès de la Série 10, qui nous a permis pour la première fois de reconquérir des parts de marché sur nos concurrents japonais.

Cependant, malgré l'augmentation du revenue, le profit a été moins important qu'en 1983 dans un contexte (cours des monnaies, développement de la concurrence, contrôle des prix . . .) qui ne nous a pas permis de protéger nos marges."

En 1984 un des faits marquants pour RXF a été la mise en place un réseau de vente indirect, concessions et boutiques. L'idée de distribution par des concessionnaires avait été testée en 1983. Il s'agit d'encourager des collaborateurs à créer leur propre entreprise, en agent exclusif, dans des zones mal couvertes par la force de vente directe. Celle-ci est recentralisé sur des zones à très fort

Les 60 concessionnaires actuellement installés ont des résultats supérieurs de 50% aux prévisions. Le réseau des boutiques, qui a également démarré en France en 1983, est une seconde réussite. 17 boutiques sont ouvertes en fin 1984. Elles proposent au public des produits Xerox, petits copieurs et machines à écrire, et une gamme de micro-ordinateurs Xerox et non Xerox. Les boutiques sont également des copies-service.

La filiale française a été la première à intégrer la distribution de produits tels que les machines à écrire dans les objectifs des vendeurs copieurs. C'est également désormais le cas des microordinateurs pour les Ventes Directes. Depuis le lancement de la Série Xerox 600 en 1982, la part de marché de la machine à écrire a atteint 17% pour RXF, et continue à s'accroître. Les ventes sont impactées du fait que c'est la seule machine à écrire actuellement fabriquée en France.

Un Centre Technique a été ouvert à Paris pour réparer les copieurs bas-degamme et les machines à écrire. Le dépannage est fait sur place chez le client, ou au Centre Technique où le matériel peut être apporté. Grâce à une meilleure organistion et à une bonne formation, les techniciens ont augmenté leur productivité de 50%.





Concessionnaires. Photo en haut: Vincent Nys (à droite) à l'Isle-Adam. En bas: Pierre Poitreau, Seine-et-Marne

Bureau, Montereau.

La Division des Systèmes de Bureautique et Informatique a eu de bons résultats ces cinq dernières années, et un atout supplémentaire va venir les renforcer. Ranx Xerox France a signé un accord avec la Société TECSI pour la commercialisation des programmes d'intellig-

Xerox France consacre du temps aux relations publiques et investit dans la publicité. Citons une opération tout à fait remarquable cete année: l'exposition d'affiches politiques, de la Renaissance à nos jours, dans les locaux de la Conciergerie à Paris.

Le pronostic pour 1985 est optimiste. 'Nous nous sommes donné pour objectif une augmentation de 20% de nos placements machines," dit Bernard Fournier. "Nous pensons accroître notre profit de 50% et continuer à développer de nouveaux canaux de distribution. Nous avons également un objectif d'amélioration d'encaisse, et de gain de part de marché face à la concurrence.'

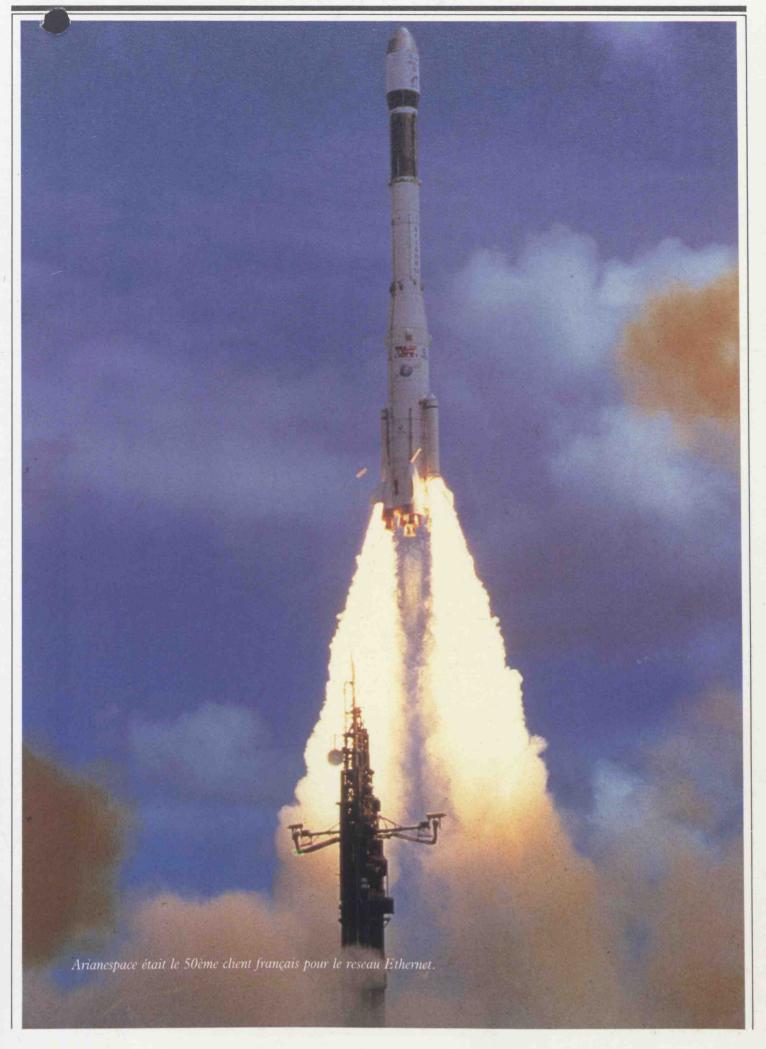
### la S.I.R.X.: seule usine produisant des machines à écrire en France.

L'usine de Lille, qui produit les machines à écrire de la Série Xerox 600 est idéalement située pour desservir le marché européen. La fabrication des machines à écrire électroniques a plus que doublé pendant l'année et constitue maintenant l'activité majeure de l'usine.

La part du reconditionnement diminue. La remise en état de la Xerox 9200 a été transférée à Mitcheldean en 1984, pour que la SIRX puisse accueillir la chaîne d'assemblage du copieur/duplicateur Xerox 1075, transféré de Venray. On y produit également des modules de finition pour les Xerox 1045 et Xerox 1048. Le concept Qualité a été introduit à l'usine en 1981. Il a entraîné une ence artificielle, qui ouvrent de nom- réduction des coûts et une augmentation breuses perspectives d'applications dans de la satisfaction client. La participation les domaines scientifiques et d'affaires. du personnel n'est pas un vain mot, 10 Pour renforcer ces activités, Rank cercles de Qualité en témoignent.

# ALTERNATIVE DISTRIBUTION -FRANCE LEADS THE WAY

Rank Xerox in France is leading the way in establishing alternative distribution channels. Its pioneering activities contributed to a 25 per cent increase in net placements, resulting in a revenue rise of 17 per cent – but profits were held back by official price controls. The popularity of the 10 Series resulted in the first gain in market share against Japanese copier producers. The concessionaire system (see pictures on this page) helping employees set up as exclusive agents in rural areas - raised sales productivity by 50 per cent in those areas. The company also operates 17 FIXL outlets, where copiers and typewriters are sold over the counter next to copy services and local salesforce activities. There was substantial progress towards integrating the salesforce, now selling copiers, typewriters and micro-computers. Assembly of the Xerox 600 typewriters at Lille helped raise market share to 17 per cent. Lille also set up assembly operations for the Xerox 1075 and is responsible for producing finishers for the Xerox 1045 and 1048 as well as continuing its refurbishing activities. The operating company is planning a 50 per cent increase in 1985 profits. The picture opposite shows Arianespace, the fiftieth customer for Ethernet in France.



# NEDERLAND - 100,000 SUCCESSEN

at onze verkoopmaatschappij, Rank Xerox (Nederland) B.V betreft, is 1984 een suksesvol jaar geweest. Met de omzet is ook de winst weer gestegen; de verkoop van kopieer-en dupliceerapparatuur steeg met meer dan 30 procent.

Hoewel Rank Xerox in Nederland als doorgangsland voor de rest van Europa – veel konkurrentie ondervindt en het prijs-niveau relatief laag ligt, behoort RX Nederland tot een van de sterkste RX verkoopmaatschappijen in Europa. Als belangrijke redenen voor dit sukses kunnen worden genoemd een efficiente verkoop en serviceorganisatie, alsmede het handhaven van hoge kopieer-volumes. Deze aspekten in kombinatie met een effektieve kostenbeheersing hebben geleid tot een gunstig winst-resultaat.

De verkoop-organisatie is uiterst suksesvol geweest met het verkopen van de 10-Serie. De Xerox 1045 en Xerox 1048 zijn bijzonder populair bij de klanten; dat heeft wellicht ook te maken met het feit dat deze produkten in Venray worden vervaardigd en het dus om echt nederlands fabrikaat gaat. Ook op het gebied van Electronic Printing is het afgelopen jaar veel gebeurd: orders van toonaangevende bedrijven als Philips, de KLM en Shell. Er mag dan ook gesproken worden van een duidelijke doorbraak van de positie van RX Nederland op het terrein van Electronic Printing.

van kopieer-apparatuur ook verantwoordelijk voor de Xerox 600schrijfmachine Serie. Dit is later dan de meeste andere RX verkoopmaatschappijen, maar na een aarzelend begin kan gekonstateerd worden dat de markt Rank Xerox percipieert als een belangrijke leverancier van elektronische schrijfmachines.

Er zijn in 1984 niet alleen meer RX produkten dan ooit tevoren geinstalleerd, maar wat belangrijker is, ook de Customer Satisfaction is toegenomen.

Hoewel de verkoop van apparatuur een steeds groter deel uitmaakt van de totale omzet en deze ontwikkeling zich naar verwachting zal blijven voortzetten, is verhuur van kopieerapparatuur nog steeds belangrijk. In 1984 werd met de overheid een nieuw kontrakt gesloten konden met verscheidene andere grote klanten bestaande contracten worden verlengd met de voor Nederland gebruikelijke periode van 3 jaar of meer. Dit mede dank zij het succes van de 10

Tijdens de tweejaarlijkse Efficiency



Peter Crawford-Taylor, Algemeen Directeur, Rank Xerox (Nederland) B.V.

Beurs te Amsterdam die in oktober 1984 plaatsvond demonstreerde Rank Xerox opnieuw haar superioriteit op het terrein van wat genoemd wordt "Document Management". Ons bedrijf was vertegenwoordigd met een indrukwekkende stand. Mede dankzij deze presentatie zijn er meer orders afgesloten dan ooit te voren. De bezoeker kon heel wat zien en leren, zoals het 8000 Systeem in direkte verbinding met Venray. Ook kon de klant kennis maken met het Field Support Systeem dat betere serviceverlening mogelijk maakt.

De ervaringen in 1984 geven RX Nederland de zekerheid dat ook 1985 een uiterst suksesvol jaar zal worden.

### XEROX 1045 PRODUKTIE honderdduizend maal sukses!

De fabriek in Venray vervaardigt de Xerox 1045 en 1048 kopieer-apparatuur en heeft tot november 1984 ook de Xerox 1075 geproduceerd. (De produktie van

Venray ook toner.

In 1984 werden zo goed als alle doelstellingen gerealiseerd, zowel in kwantitatief als kwalitatief opzicht: o.a. het AMACS Systeem werd met sukses geintroduceerd. Met dit systeem vindt de kwaliteitskontrole van het materiaal niet in onze fabriek, maar al bij de leverancier plaats, zodat het materiaal direkt voor produktie kan worden aangewend. Daarmee heeft de fabriek de voorraad onderdelen - ondanks de verhoogde produktie - kunnen reduceren en daarmee ook de kosten, verbonden aan voorraden, aanzienlij kunnen terugbrengen.

De Minister van Sociale Zaken en Werkgelegenheid heeft gedurende het jaar het Trainingscentrum voor Kantoor-automatisering te Venray geopend. Dit Trainingscentrum kwam tot stand op gekombineerd initiatief van de burgemeester van Venray en wijlen de heer Len Stierman, voormalig Director of Manufacturing voor onze fabrieken in Europa. Op dit trainingscentrum worden werkelozen vertrouwd gemaakt met tekstverwerkers en microcomputers, wat de kans op het vinden van een nieuwe baan vergroot. Ter nagedachtenis van de heer Stierman zal jaarlijks tevens een prijs worden uitgereikt aan de beste student in de Computer Wetenschappen.

In 1985 zullen er in Venray drie de laatste vindt sinds november plaats in nieuwe kopieer-apparaten vervaardigd de franse vestiging te Lille.) Het worden en men gaat van start met de Sinds begin 1984 zijn de verkopers afgelopen jaar vierde de fabriek de produktie van elektronische kompoproduktie van de 100.000 ste Xerox nenten voor een nieuwe reeks schrijf-1045, een kopieer apparaat dat overal ter machines met geheugen. Daarnaast wereld (ook in Amerika) wordt ver- bliljft de fabriek nog steeds het belankocht. Naast de machines vervaardigt grijkste Supply Centre van Europa.

## THE NETHERLANDS - 100,000 SUCCESSES

Revenues of Rank Xerox (Netherland) B.V. rose in 1984, following two years of stagnation, and profits grew, reversing the trend of recent years. Net placements of copiers and duplicators rose by a third to a new record.

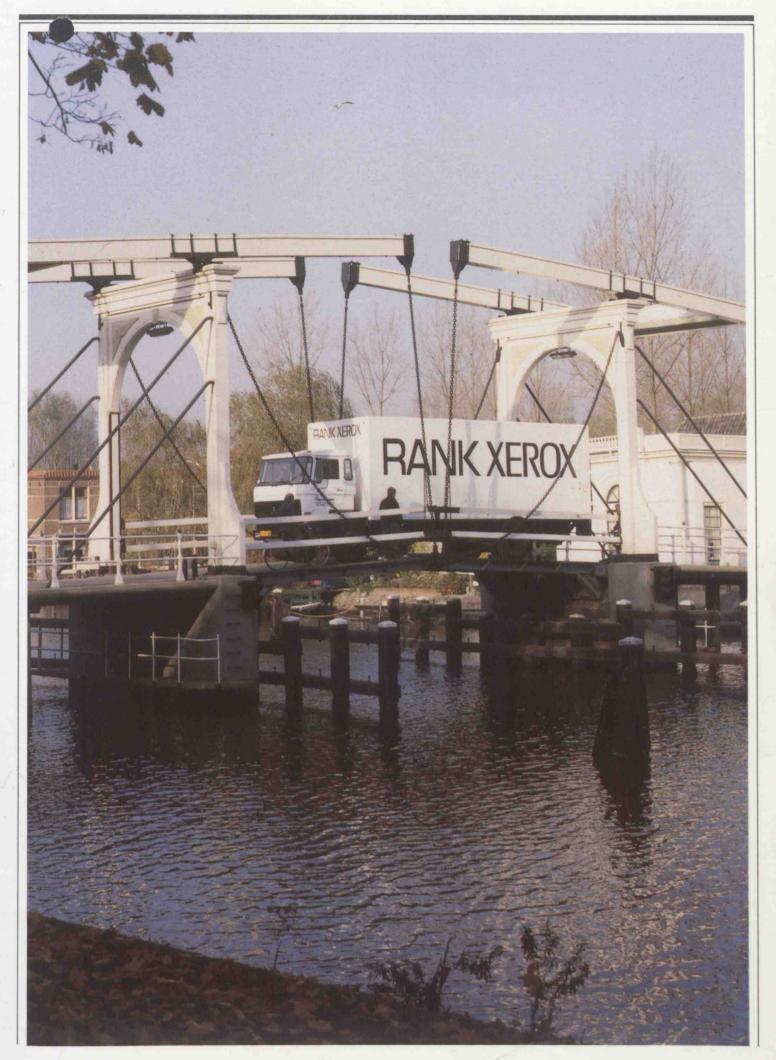
One of the company's major strengths is its technical service and distribution organisation which has been at the forefront of innovations in service efficiency.

The Xerox 1045 and 1048 copiers, which have the advantage of being manufactured in Venray, were particularly popular with customers. Placements of electronic printing systems accelerated during the year and the Xerox 600 typewriter series was introduced in the Netherlands.

Our Venray plant produces Xerox 1045 and 1048 copiers, and until November 1984 also manufactured the Xerox 1075. During 1984, the plant produced its 100,000th Xerox 1045 copier. Quality and quantity targets were met in almost every area of the plant's operations, and an automated materials control system was introduced, resulting in the lowest number of parts ever held in stock, and the more efficient deployment of staff. Automatic cranes, shuttles and guided robot vehicles were also introduced.

A Vocational Training Centre for Office Automation, a joint venture with Venray's Burgomaster, was opened to train unemployed people to use word processors and

During 1985 three new copier models will be assembled at the plant and it will also become the major European Supply Centre for Rank Xerox.



# QUALITY PAYS OFF IN THE UK

In November 1984, the Rank Xerox factory at Mitcheldean became one of three winners of the first British Quality Award. The Award was made under the British Quality Award Scheme, by the British Quality Association, in support of the National Quality Campaign. The object of the scheme is to encourage quality improvement in industry and commerce throughout the United Kingdom, and awards are made to those individuals or groups considered to have achieved the most notable successes in improving the quality of a British product, service, process or technique.

Open to all British companies, some 200 initial applications were made to produce a short list of 24 major organis-

The Mitcheldean submission was based on a wide ranging programme of activities geared to building in quality during the manufacturing process rather than the traditional method of inspecting products for quality at the finished stage. The whole organisation was involved, including shop floor and administration, with the emphasis on team work to achieve quality in every aspect of the operations. With the objectives of improving customer satisfaction, increascosts, the Mitcheldean programme market in research and application into concentrated on engineering design, materials from suppliers, the production cuits. Developments currently underprocess, quality awareness and training.

1984, Mitcheldean was awarded the compact copiers, which will cost less and Sword of Honour, the most prestigious safety award in the world. Each year the British Safety Council selects only 30 organisations from hundreds of applications received from around the world, for the Awards.

The plant mission at Mitcheldean is competitors. the highly automated assembly of small copiers in the 10 Series range, as well as printers.

### Production Trebled at Welwyn Garden City

At Welwyn Garden City, Rank Xerox output and to resolve any problems. has one of the largest manufacturing trebled its production and has capability for a further 75 per cent increase. The boards are produced mainly for the 10 Series copiers for Venray and the North American Manufacturing Division. 1984 saw a significant increase in the use a stable or decreasing cost base"





Electronic PWBA's are also produced for the CBA group of products and the

other companies. new ways of mounting integrated cirway will mean smaller integrated circuits During the same month of November and smaller boards, leading to more take up less space in the office. Another field in which Welwyn is a leader is in the production of rigid and flexible belt photoreceptors for copiers and duplidevelop the former for some of our

Quality is number one priority and is at a very high level in the plant, with the the high-volume Xerox 9000 Printing current rejection rate of less than 0.5 per Series. Mitcheldean also produces cent and a target to reduce this to 0.3 per processors for the Xerox 9700 electronic cent in 1985. Employees are responsible for their own quality control with a planned for 1985. Quality Assurance audit routine in place, and meetings are held daily to discuss the quality of the previous day's

The Rank Xerox Engineering Group operations for printed wire board at Welwyn was responsible for designing assemblies (PWBA's) in the UK. Since and developing the highly successful the beginning of 1984, the plant has Xerox 1045. Work continued on the development of follow-on products for are falling, but we are having to pay introduction in 1985 and 1986 which more, due to the weakness of the pound, specifically address the challenges of for the equipment we buy. We must high quality and reduced unit costs. strive for increased revenue growth from

Top: Bill Pinkney (right), one of the Rank Xerox(UK) Government Branch management team, with a customer from the House of Commons, Michael Griffith-Jones.

Bottom: Alan Buckle, Managing Director of Oakley Office Systems, one of the new joint ventures in the Rank Xerox dealer network known as Xerox Business Centres.

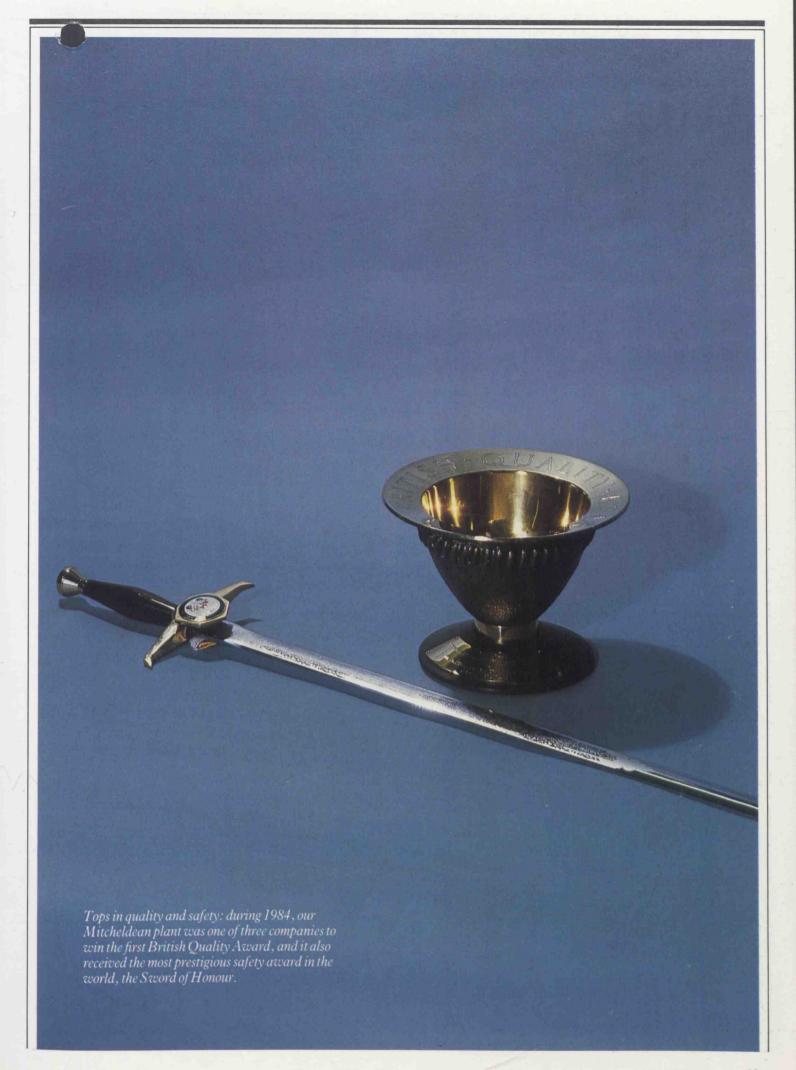
of computer aided design equipment which is leading to improvements in both design quality and efficiency.

### **Xerox Business Centres**

Rank Xerox (UK) Limited net placeplant is actively pursuing business for ments of copier and duplicators rose by 14 per cent to a record level reflecting the Welwyn Manufacturing Operations success of the 10 Series. In addition, the ing competitiveness and reducing the and Engineering Group are ahead of the company increased placements of SBD products significantly. Rank Xerox (UK) announced a major exhibition, conference and university programme to promote excellence in the understanding and application of Information Technology and tackle the skills gap which is emerging as an inhibiting factor in Britain's economic recovery.

In order to widen its coverage of the small business sector, the company set cators, and the plant has begun to up a network of joint venture dealers known as Xerox Business Centres. In appointing a sole agency to market Rank Xerox copiers and electronic typewriters, the company takes an equity stake and provides financial and management resources. Several of these centres were set up in 1984 and more are

The company is confident of improving its performance in 1985 in both its machine placements and its financial results and substantial efforts are being made to reduce its costs. General Manager Don Wilson says, "We must reduce our costs to survive in a marketplace where competitive machine prices



# **INTERNATIONAL SUCCESSES**

The developed and developing countries in Africa, Asia, the Far East and Australasia are of growing importance to Rank Xerox, accounting for 13 per cent of total revenues. The current recession in many of these territories has interrupted a trend of faster growth than in Europe. But the trend could be re-established in 1985 as economic growth recovers. Moreover, the opportunity for gaining new markets is exciting, particularly in countries with the vast population of India and China. In this feature, we focus on the developing world in India and East and Central Africa, and the progress being made in Australia with Ethernet.

Modi Xerox goes Public

During 1984 Rank Xerox claimed another first. Our joint venture company in India, Modi Xerox, became the first Xerox operation outside North America to offer its shares to the public. Modi Xerox was incorporated in September 1983 as a joint venture between Rank Xerox Ltd, with 40 per cent of the shares and the Modi group, which also owns 40 per cent. The remaining 20 per cent was offered to the Indian public.

Modi Xerox's plant is located in Rampur, Uttar Pradesh, approximately 140 miles from Delhi. It is scheduled to start commercial production of Xerox 1045 in March 1985. This will enable the company to offer state-of-the-art xerographic products to the Indian market. The plant will contribute towards the establishment of ancillary industries through local sourcing of some parts.

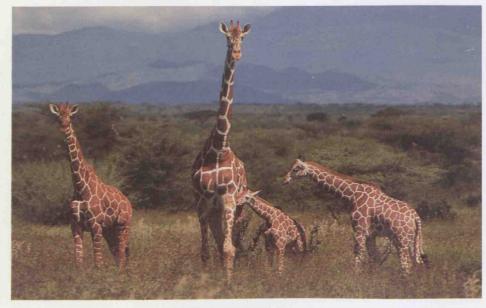
Rank Xerox will provide technical training and assistance, supported by a number of Rank Xerox expatriates.

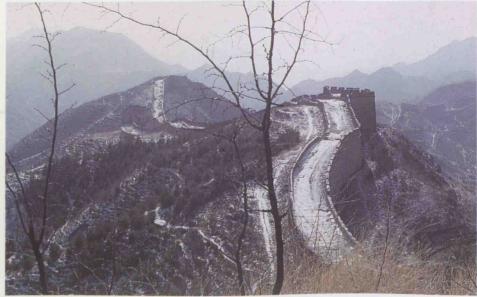
This exciting joint venture builds on the already successful creation of Indian Xerographic Systems which was established in 1982. In May 1984 IXS received the Certificate of Export Excellence from the Indian Export Promotion Council.

#### Alternative Distribution in Africa

Rank Xerox sales in 18 countries in East and Central Africa are controlled from Nairobi. The logistics of selling to such a duplicator net placements of 17 per cent vast area and in so many different in 1983 and 48 per cent in 1984. This has countries are formidable but, by careful enabled East and Central Africa to grow use of alternative channels of distri- its revenues by 17 per cent in 1984. bution, this part of our business has shown outstanding growth.

All sales in this region through sales and service agents, dealers, and distributors are coordinated through Africa considerable progress in installing Direct Sales (ADS) by George Abonyo, Ethernet Systems. The level of recent ADS Manager.





In 1981 an economic slump hit most African countries. Importing machines and spare parts became very difficult because of foreign exchange controls. But it is since that time that alternative channels have flourished, selling only in convertible currencies.

Indeed the consistent increase in activity since 1981 has now resulted in ADS contributing more net placements in 1984 than sales through traditional channels. This led to a growth of copier/

Ethernet in Australia -The Biggest Order

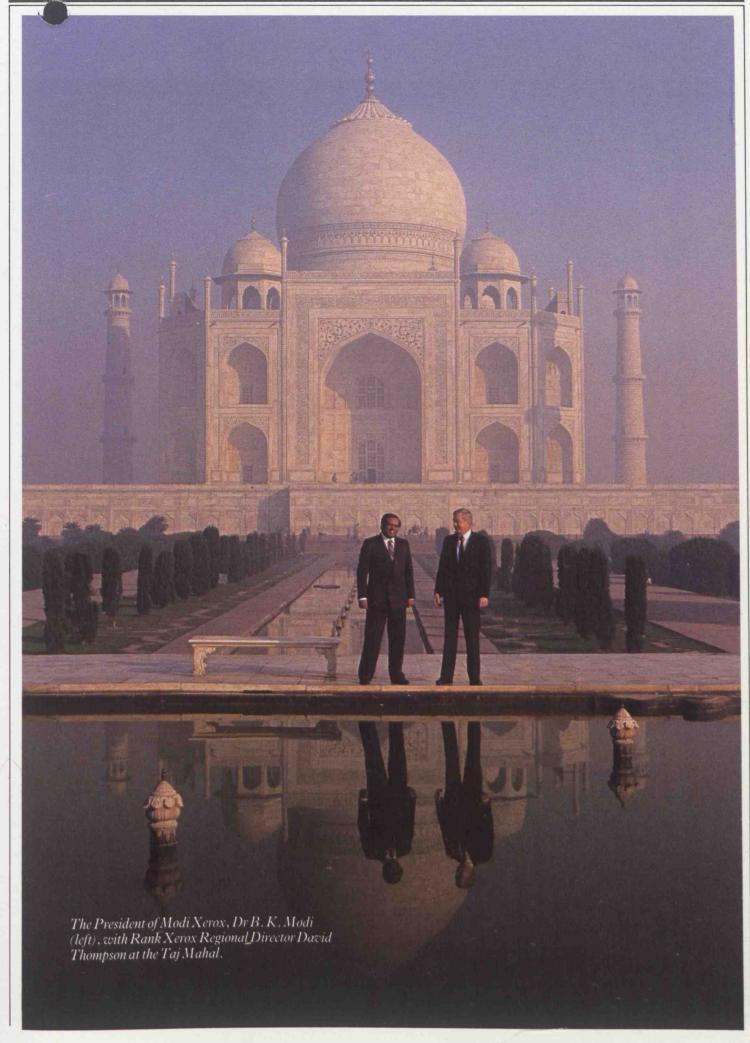
sales has been such that the company has Ethernet utilisation.

Top: To cover the vast areas of East and Central Africa, Rank Xerox has appointed dealers and agents, whose total placements of copiers rose by 48 per cent in 1984. Bottom: The new 'open door' policy in China represents a potentially vast market for Rank Xerox, which has begun to sell its products in the world's most populated country.

achieved the largest single Ethernet order to date in Rank Xerox worldwide.

The massive installation at the department of Administrative Services. Federal Government, Canberra will link five separate buildings in the Canberra area and will interface a number of Federal Government mainframe computers. Some 60 Rank Xerox products will be used initially.

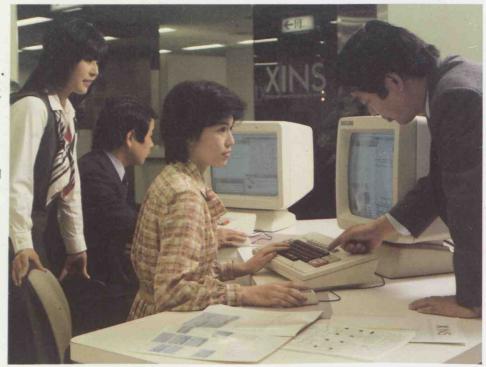
Such is the growth and level of interest Rank Xerox (Australia) has been making in the Ethernet products that a separate Advanced Systems Unit is now being located in Canberra to further develop



# 富士ゼロックス、その調和のとれた成長

富士ゼロックス株式会社は、日本 の富士写真フイルムと、英国のランク・ ゼロックス社の合弁により、1962年に 設立された。そのめざましい成長は、 日本国内および東南アジアにおける複 写機のレンタル販売によるものである が、1970年代には、日本の国内市場向 けに特にデザインされた広範な商品群 を開発生産するまでに成長を遂げてい る。現在では、複写機をはじめ、ファ クシミリ、電子プリンティング・シス テム、ビジネス用パーソナル・コンピ エーター、ワード・プロセッサー、さ らにローカルエリア・ネットワーク・ システムにまで拡大しており、これら の一部は、韓国、台湾、フィリピン、 タイ、インドネシアの関連会社をとお して、東南アジアに輸出されている。

高は、9億4,500万ポンド ('83年度 り最も効率的でよくマネージされた企 長を示している。 7億1,100万ポンド)。ランク・ゼロ 業のひとつに数えられるようになった。 将来の目標は、生産とマーケティ ックス社への利益貢献は 5,500 万ポン TQC によって生産性は大幅に向上し、 ングカの増強であり、営業ネットワー ド (対前年度比 35 % 増) と、グルーブ これがマーケットシェア増大につなが クの拡充である。今後の販売活動の中 全体の利益の27%に達している。日本っている。商品開発にも極めて大きな 心に位置する商品は、創造的な仕事に 国内の販売拠点は、180 カ所にのぼる 力を入れており、ミッチエルディンで より多くの時間をふり向けられるよう 直販網に加え、地元有力資本との合弁 組み立てられているゼロックス 1035 お にという設計思想に基づく 8000INS による販売会社や代理店・特約店を擁 よびゼロックス 1020 の開発を手がけた (インフォメーション・ネットワーク・ する。



富士ゼロックスの急成長を支えた のも富士ゼロックスである。

過去5年間に、年平均にして、販 富士ゼロックスの 1984 年度の売上 ひとつの鍵は、TQCであり、これによ 売は 16.5 %以上、利益は 12.9 %の伸

システム) である。

# FUJI XEROX - CONSISTENT GROWTH

Tuji Xerox was founded in 1962 as a for 1984 was £945 million, compared early 1970s, Fuji Xerox has expanded of over 180 branches in addition to a into the development and manufacture of a wide range of products designed in the first place specifically for the local area network systems. Fuji Xerox exports to South East Asia through

→ joint venture between Fuji Photo with £711 million in 1983. Its profit Film Company Ltd and Rank contribution to Rank Xerox amounted Xerox Ltd. The company's early growth to £55 million (up 35 per cent), accountwas based on the rental of copiers in ing for 27 per cent of total group profits. Japan and South East Asia, but since the The Company has a nationwide network group of subsidiaries which are joint expansion and improvement of the ventures with regional companies.

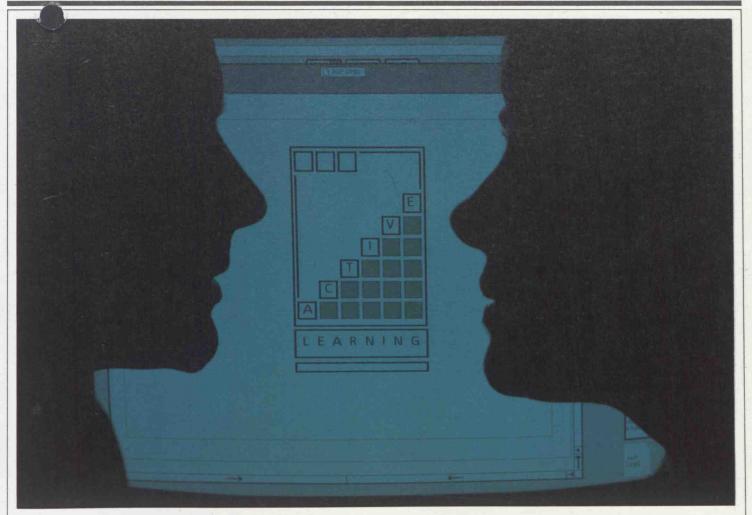
Japanese market. As well as copiers, one key to the rapid growth of Fuji network of sales branches and subthese now include facsimile transceivers, Xerox, and has helped make the comelectronic printing systems, small busi- pany one of the most efficient and wellness computers, word processors and managed companies in Japan. The TQC programme has resulted in a substantial increase in productivity, which has also operating companies in Korea, Taiwan, helped Fuji Xerox to increase its market the Philippines, Thailand and Indo- share. Fuji Xerox also places great emphasis on product development and Information Network System showroom Fuji Xerox's total operating revenue was responsible for designing the Xerox in Tokyo.

1035 and 1020 copiers assembled at Mitcheldean.

In the past five years, sales have grown at a compound rate of over 16.5 per cent, and earnings have climbed 12.9 per cent

Future objectives will focus on the company's production and marketing Total Quality Control (TQC) has been capabilities, and the extension of the sidiaries. At the centre of the new marketing activities will be the promotion of the FX 8000 INS (Information Network System), an integrated office systems concept designed to allow the user more time for the creative process.

The picture above shows a Fuji Xerox



# LEARNING IS BETTER THAN TRAINING A NEW APPROACH AT RANK XEROX

tinued its commitment to train- 1984: the Active Learning Process. ing and embarked on an ambitious new strategy for the future. Rank Xerox makes a significant commitment of cost and manpower to training because its importance for the future of the business is fully recognised. Training is now a multi-million pounds business within the company. As our activity continues to grow, more and more time is being spent by employees attending training courses. The continuing development of the company makes it vital that our people are kept up to date with the appropriate knowledge and skills. For example, sales integration and created an enormous training load.

The man years spent at training school during 1985 would make "training" the equivalent of the sixth largest Operating Company.

If we continue to provide our training only by traditional methods it is clear that the time required from our emplovees will become excessive.

In order to ensure that neither the quantity nor quality of our training suffer in the future a major new invest- way.

uring 1984 Rank Xerox con- ment in training was approved during

Studies show that approximately 60 per cent of time at training school is spent acquiring knowledge. The remaining 40 per cent is spent acquiring skills.

Acquiring new skills requires practice and feedback. This means spending time in the classroom working with others. But knowledge can be gained differently. Much information can be assimilated while working by oneself and by using a variety of media such as books, audio or visual aids, and micro-computers.

These alternative methods can therefore provide more training at less cost because they require less money on the increasing array of products have accommodation and travel and less trainer time.

> Learning Process will provide all major Rank Xerox locations with a range of books, films, manuals, audio-visuals and ultimately computer-based learning. It is intended that much of the company's basic knowledge training will be provided on this basis, enabling trainees to



International training team. Left to right: Jane Le Surf, John Agate, Maja Schoefer, Mike Ratcliffe, Graham Green.

This will not simply be a passive pro-Over the next few years the Active cess. Active learning will be a fully integrated part of the normal training schedule. And participants will be entraining materials in various forms: couraged to test and challenge how much they have learned.

This method of training is starting to be used by a number of the leading business corporations. By introducing Active Learning Rank Xerox will conwork at their own pace and in their own tinue to be at the forefront of training technology.

# THE MAKING OF AN IMAGE

Rank Xerox corporate identity advertising campaign was launched in the UK by the advertising agency Young and Rubicam, with a budget of nearly £1 million in the first month alone. During 1985 the campaign will be extended to France, Spain, Italy, Portugal and Finland. The campaign has already been running for a year in Sweden.

The new corporate identity campaign results from market research surveys into the image of Xerox in the USA and of Rank Xerox in France, Germany and the UK.

The campaign will convey the concept of "Team Xerox", with an unmatched product array and a combination of people and machines working together, and is aimed at strengthening our total capability.

The customer benefits conveyed by the new advertising can be defined as, "Whatever your business or organisation, you can depend on Rank Xerox to solve your document management problems cost-effectively and to go on doing so as you grow"

The campaign has been designed so it can be extended over at least three years and be capable of incorporating range and product advertising under its thematic umbrella.

The approach is cross-cultural and cross-linguistic. TV is being used in the UK, Italy and Spain, and all six

Nowards the end of 1984 a new countries will have press advertising.

A major part of the promotional money will be spent in the UK, where there is the largest profit opportunity. Spain is a highly profitable country and also an important one for systems and keyboards. In Italy, an extensive image counter the influence of Olivetti and to build a keyboard base.

We will be building on our successful image in France, and as it is a prime keyboard and systems country, the corporate image will be presented through a press campaign. In Finland, we are up against an intensely competitive systems

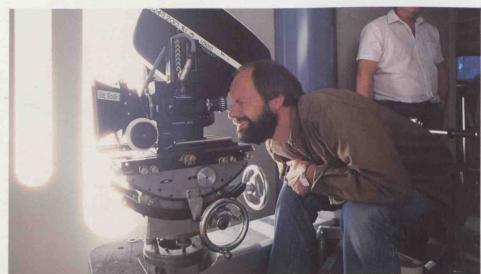
The campaign will fall into two dis-

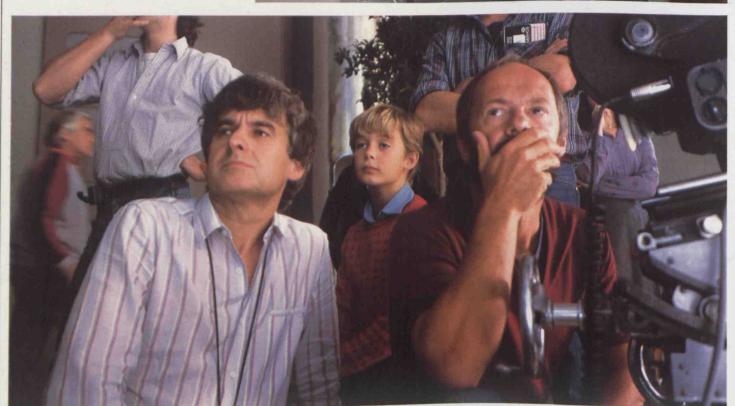
tinct parts. The first will establish Rank Xerox across the office equipment spectrum, and will also outline the meaning and significance of "Team Xerox".

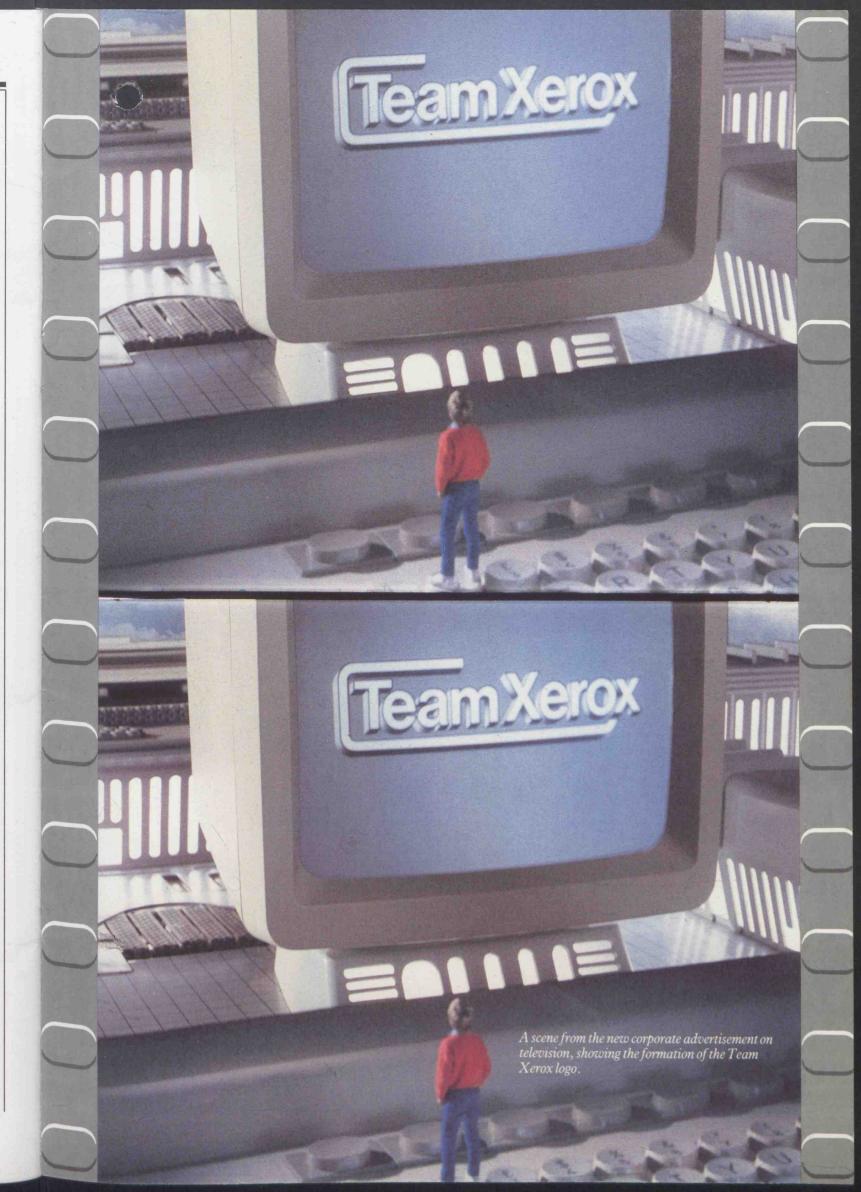
The second phase of the campaign will move on to emphasise the strength of Team Xerox and our ability to solve building programme is needed to problems. It will also link the campaign to product series advertising. Sweden has already reached the second phase.

The new corporate identity advertising campaign will clearly help enhance our image and stress the total capability of our product range.

# Team Xerox







# RANK XEROX IN THE COMMUNITY

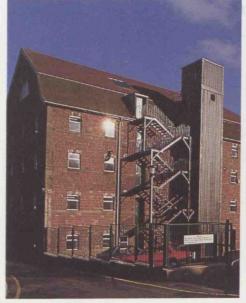
ank Xerox continues to place a high priority on social responsibility. Our Portfolio of Social Actions covers three main areas: research into work and society, emphasising jobs, education and social values; schemes to bridge the gap between school and adulthood for the young unemployed; and industrial/educational liaison. The Portfolio also embraces participation in the arts, particularly where young people are involved, such as our sponsorship of the Royal Court Theatre's Young Writers' Festival in the

During the year, particular emphasis was placed on job creation schemes. The major UK event was the opening of the ITeC (Information Technology Centre) at Colnbrook, Berkshire. The ITeC trains 16 to 18 year olds in skills such as computer programming, computer applications and data bases, analogue and digital electronics, computer maintenance, control system practices, keyboard use, word processing, telecommunications use and modern office practice. The centre is run by a seconded Rank Xerox manager on Rank Xerox premises, and takes our involvement in information technology a stage further than in the other ITeCs we have cosponsored.

During the year, Rank Xerox agreed to support a major job creation programme in the Netherlands. The programme, which is being run by the City of Amsterdam, is expected to create 1,000 new jobs within the next three years. Funding is shared between Rank Xerox Holland and the Rank Xerox

At Mitcheldean, where manpower had been reduced since 1980, we have embarked on a number of projects to resettle redundant employees and to provide stimulus for the development of new business in the area. An independent organisation, FOCUS, has helped resettle over 50 per cent of the ex-employees since 1982. We have also been actively engaged in establishing two local organisations offering help to small businesses - the Gloucestershire Enterprise Agency and the Gloucester City Enterprise Workshop. A subsidiary company, the Mitcheldean Enterprise Workshops Ltd, was set up in 1984 to convert certain buildings on the 67 acre site into a workshop complex for small businesses. The workshops were officially opened on 15 November, 1984.

We allocate a percentage of our pretax profits each year for charitable donations. During 1984, £1.4 million Xerox Trust in 1984 included:







Left: Mitcheldean Enterprise Workshops. Right: Rank Xerox Regional Director Bryan Nicholson was appointed Chairman of the Manpower Services Commission. Bottom: Students being trained at the Information Technology Centre at Colnbrook.

was donated for this purpose. Most of - Fondo per l'Ambiente Italiano's the company's charitable funds are allocated to the operating companies, who are able to donate it to the national, social, educational and cultural programmes which they consider most worthwhile.

In addition, selected international causes are supported by the Rank Xerox Trust. In the UK the Trust assisted the Inter-Action Trust's community computer camps, which teach disadvantaged young people computer literacy and programming skills. The Trust is also supporting Inter-Action's occupation preparation systems, which train young unemployed people in the skills needed

Other projects assisted by the Rank

- cultural heritage exhibition in Italy
- the Research Centre for International Law at Cambridge University
- part funding of a Chair in International Management at INSEAD in Fontainebleu, France
- part funding of a Chair in Communications at Victoria University in Wellington, New Zealand
- the Royal Shakespeare Company's European tour

In October 1984, Rank Xerox Regional Director Bryan ("Nick" Nicholson was appointed on secondment for three years as Chairman of the Manpower Services Commission in the UK, the Government body dealing with national employment and training programmes.

# RANK XEROX WORLDWIDE

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#### Xerox Learning Systems D-4000 Dusseldorf 11

### Rank Xerox Greece SA 154 Syngrou Avenue

Athens TT 404

### Hong Kong Rank Xerox (Overseas) Ltd 54F Hopewell Centre 183 Queens Road East Hong Kong

Shugart (Far East) Ltd Great Eagle Centre 23 Harbour Road Wanchai Hong Kong

### XEROX

### FUII **XEROX**

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Poyle Estate

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Kenya Rank Xerox Kenya Ltd Kenyatta Avenu

Malaysia Rank Xerox Ltd 1-A Gelang Bersatu 13/4 Petaluig Gaya

# Morocco Xerox Maroc SA

Rank Xerox (Nederland) BV

### Xerox Computer Services BV Maashesweg 89-91 Post Box 400

Versatec riihviestel 35

# New Zealand Rank Xerox (NZ) Ltd

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Versatec Electronics Ltd 5 Oxford Road Newbury Berkshire RG13 1QD

Xerox Computer Services Ltd Hyde House Edgware Road Colindale London NW9 6LH

Xerox Learning Systems International Ltd Spenklin House Gunnersbury Avenue Chiswick London W45QB

Xerox Publishing Group Ltd Erasmus House 58/62 High Street Epping Essex CM16 4BU

Xerox Medical Systems Internationa Legion House 838 Uxbridge Road Middlesex UB4 8HZ

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Korea Xerox Co Ltd 120-20 Seosun-Dong Choong-ku

Seoul

Philippine Fuji Xerox Corporation IFC House Corner Alfaro and Gallardo Streets Salcedo Village Makati Metro Manila

#### PT Astra-Graphia IL Kramat Raya 43 Jakarta Indonesia

Philippines

Taiwan Fuji Xerox Corporation Chung King South Road Taiwan

Thai Xerographic Systems Co Ltd K & V Building No 16 Surasak Road Bangkok

# **RANK XEROX**



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Designed and Printed in England by Lithofast Company Limited.

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14 May 1985

The Prime Minister has asked me to thank you for your letter. As you know, she is sorry you are unable to attend the meeting, but was very grateful to you for letting her have your views in advance.

(MARK ADDISON)

A. Poot, Esq.

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10 DOWNING STREET 13 May 1985 From the Private Secretary Der Elizabet Meeting with Industrialists on 21 May I attach, as promised, a list of those industrialists down to attend the meeting next week, together with a list of refusers. Of the three people in the latter group Sir William Barlow has, as you know, suggested inviting Mr John White, who is coming to the meeting. Mr. Poot has now written in with comments on the points to be discussed at the meeting, and I attach a copy of his letter, which you will be able to take on board in drawing up the briefing. I am copying this letter and a list of those attending to the Private Secretaries to the Secretaries of State for Energy Scotland, Wales, Employment, Trade and Industry, the Minister without Portfolio, the Parliamentary Under-Secretary of State for Industry and Sir Robert Armstrong. Mell Addwr \* I have just heard that Philip Hyper (Layine) will be coming to the meeting. Miss Elizabeth Hodkinson Department of Education and Science.

#### MEETING OF INDUSTRIALISTS 21/5/85

#### **ACCEPTANCES**

Sir Austin Pierce (British Aerospace) M Bett (B.T.) in place of Sir George Jefferson Robert Thornton (Debenhams) J D Alun-Jones (Ferranti) S Toy (Ford Motor Co) R J Clayton (GEC) Derek Roberts (GEC - Director of Research) Sir Austin Bide (Glaxo Group) D A Baldwin (Hewlett-Packard) Sir Edwin Nixon (IBM(UK)) J H Harvey-Jones (IC) R G C Messervey (Lucas Industries) Viscount Sandon (Deputy Chairman National Westminster Bank) Sir John Clark (Plessey) Sir Ernest Harrison (Racol) H Orr-Ewing (Rank Zerox) Sir Roy Sisson (Smith Industries) Sir Kenneth Corfield (S.T.C.) P Swinstead (System Designers) Peter Laister (Thorn EMI) R E Utiger (T.I. Group) Sir Terence Beckett (CBI) Sir Robert Clayton (I.T. Skills Agency - CBI) Sir Francis Tombs (Rothschilds/Rolls Royce) Robin Duthie (Scottish Development Agency) J S Whyte (National Electronics Council)

#### REFUSALS

Sir W Barlow (BICC)
P A B Hughes (Logica Holdings)
A Poot (Phillips)



arundel great court 8 arundel street london wc2r 3dt

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13 May 1985

The Rt. Hon. Margaret Thatcher, PC The Prime Minister 10 Downing Street LONDON SW1

Graduate Engineers and Technologists

I refer to your letter of 19th March, and my letter of 26th March, and have pleasure in making some comments, as requested in Mr. Mark Addison's letter of 27th March, on the subject of Graduate Engineers and Technologists.

We would certainly agree with the priority of this subject. Although your letter particularly refers to Graduate level, we would emphasise the importance of correcting the scarcity in a broader definition.

This scarcity is clear in the range from those with degrees, or further degrees, right through the range of technical levels to the different levels of technicians. It is also clear within the particular categories; for example, we do not only require those with first class honours but also those with other class or pass degrees. Some of these would have had good HNC qualifications in the past.

We very much welcome the government decisions to redirect expenditure towards the priorities in the £43m referred to in your letter and attached press release. We do, however, wonder if that change of emphasis is enough to correct the supply side of this problem. We, in industry, are continually having to take decisions on priorities between different technical expenditure. We believe that still greater resources need to be concentrated in the areas of electronic engineering, software engineering, and in particular systems engineering, and we are not convinced that the universities will themselves take the difficult decisions on change without much stronger direction from Government.

It must be significant that we could get perhaps 100 good applicants for Graduates in say social science or related subjects for one of



the few jobs needing such qualifications in our industry. By comparison, we have to compete very hard for any electronic engineers and would, for example, expect to have to make three job offers for every graduate job to be filled.

We do agree that Industry itself also has obligations in contributing to this overall problem, but we should emphasise that it is not only the electronics industry involved but also the increasing number of non-electronic companies are increasingly employing such skills. They do not normally contribute to the training but will recruit qualified employees trained by companies such as us.

We see considerable activity already existing within industry under the headings of equipment, help with teaching staff, sandwich courses, design of development courses and the offering of worthwhile jobs.

These commitments should continue and expand but they are best stimulated and managed within a large group like ourselves within individual businesses and companies who, at local level, are most responsive to the changing needs.

On the particular views requested, it will certainly be electronic engineers with software expertise and systems engineers who will be in greatest demand, whether they come from universities or polytechnics is increasingly irrelevant.

We think that it would be correct to support the umbrella role of the I.T. Skills Agency with specific contact and support between individual companies and educational establishments.

We would certainly intend to increase the sponsorship of undergraduates - but this is again dependent on the encouragement of enough good secondary school students to be attracted to these subjects, and a sufficient number of places being provided in the universities and polytechnics for them to become qualified engineers and technologists.

Ours.

Contant foot

A. POOT

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RECEIVED 1 3 MAY 1985



# 10 DOWNING STREET

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10 May, 1985. - yent please.

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From the Private Secretary

Der Elizabet

SSP8/11963/pm.

I attach a letter from Sir William Barlow raising a number of points in relation to the meeting with Industrialists to discuss the switch on 21 May.

I think all the Prime Minister needs to do in reply is to welcome the indication Sir William gives that BICC would offer additional sponsorship and places for sandwich course students, and to express her thanks for his interest in the debate. You may think, however, that one or two other points need to be covered as well, in which case I should be grateful for a draft reply.

Lev Mell Addhon

(Mark Addison)

Miss Elizabeth Hodkinson, Department of Education and Science.



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From the Private Secretary

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(Mark Addison)

Miss Elizabeth Hodkinson, Department of Education and Science.

5RW



BICC plc

P.O. Box 5 . 21 Bloomsbury Street . London WC1B 3QN . England

Telephone: 01-637 1300 - Telex: 628811 BICC G-Station Code BIGHO

Your Ref:

Our Ref:

Sir William Barlow

The Rt. Hon. Margaret Thatcher, MP, The Prime Minister, 10 Downing Street, Whitehall, LONDON SW1.

7th May 1985

Dear Prime Minuter,

As you know I am prevented, by absence overseas, from attending the meeting you have convened on the subject of education and training in engineering and technology.

In view of the critical nature of the subject I know that you will understand my wish to make one or two points which seem to me important to the debate.

We welcome the size and weight of the programme you outline and note that discussions are taking place to decide which institutions should benefit from it.

Given the time-scale likely to be involved in the production of fully fledged university graduates in reasonable numbers I wonder whether greater attention, and possibly some part of the available financial support, might not be given to the polytechnics which, under the auspices of the National Advisory Body for Local Authority Higher Education (NAB), might be able to produce reasonable numbers via conversion or retraining programmes in a much shorter period. I am aware of the NAB proposals to the Butcher Committee relative to IT, made in 1984, but no reply appears to have been made so far. A small part of the £43m spent in this direction could well help fill a critical gap.

In response to you specific questions we see no problem in offering additional sponsorships or places for sandwich course students or in providing jobs and a career path for graduates. We would also be willing to help in course design. What assistance we might be able to offer in the provision of equipment and teaching staff will depend on the scale of the particular requirements but we are, as a minimum, prepared to look at specific requests.

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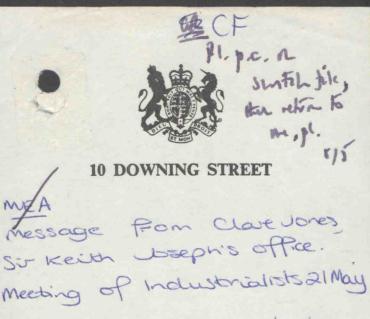
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We hold no strong view about the types of graduate but feel that a spread is always going to be required whether from universities or polytechnics. Whatever their discipline or place of learning it is essential that students are given a thorough grounding in the fundamentals of their subject. Such a foundation produces, in our view, a stronger engineer or technologist capable of tackling a range of jobs while graduates from courses which are broad but not deep lack the base from which to grow.

Finally, I believe that it is most important that we take a "GB Limited" and so centralised approach to this matter.

Finally, I believe that it is most important that we take a "GB Limited" and so centralised approach to this matter. Fragmented efforts, no matter how well intended, will hinder the country's progress in developing technological education and training.

Yomo micerely, William Barbar Science Budgel DEA 25



A miss Lally, dept.

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on pl why Sue - yous? 10 DOWNING STREET MARK. Meeting Zist. May an 1.7. Skill Shortages John White wistes to ensure that the is dear he is attending as Deputy Chairman of the Nat Electronics (auncel, and adt as Chairum of Plessey Telecons Could any invites, place - names ... etc. etc. reflect that, please.

Bemaph

# DRAFT REPLY TO LETTER TO PRIME MINISTER FROM SIR WILLIAM BARLOW (BICC)

Thank you for your letter of May 7 about the recently announced Engineering and Technology programme.

I am sorry you were prevented by absence overseas from attending what proved to be a most useful and supportive meeting on May 21. I was, however, pleased to see her from your letter that your Company, like those represented at the meeting, will be providing additional assistance to institutions benefiting from the programme. We are grateful for this.

I was interested to note the other points in your letter and I can now tell you that, in the light of further consultation with industrialists and others, the Government has decided that there should be some provision for selected polytechnics in the second phase of this programme. In line with the objectives for the programme as a whole, this provision will be mainly at undergraduate level, though it is possible that there will be some postgraduate (including "conversion") courses at selected polytechnics included in the programme.

I an welly forward to our formerly meety reatyer, while will be awaying in one course, when we can are to proper which has been neds.

Bemapc.

# DRAFT REPLY TO LETTER TO PRIME MINISTER FROM MR TO Y (FORD)

Thank you for your letter of May 21 about the Engineering and Technology programme and related matters. I am Judyn Shere my feelig but we head a wight neety.

I was pleased to learn how much your company is already doing to assist the work of higher education institutions in engineering and technology subjects. I am grateful for your promises of additional assistance of this kind. such concrete support from you and your colleagues in industry is vital to the success of this programme.

The Government agrees that the polytechnics can make a valuable contribution to the production of engineers and technologists which industry and the nation so urgently require. We have consequently just announced that there will be scope for including selected polytechnics in the second phase of the Engineering and Technology programme. We do, however, also see a most important role for creating additional graduate output from universities in this programme in line with much of the advice we have received on this programme from industry and other.

I know that Tom King will be responding separately to your comments on the YTS. I share your views on the importance of the scheme and I know that Tom is as concerned as you are about the way in which some have been misrepresenting it.



BICC plc

P.O. Box 5 . 21 Bloomsbury Street . London WC1B 3QN . England

Telephone: 01-637 1300 - Telex: 628811 BICC G-Station Code BIGHO

Your Ref:

Our Ref:

Sir William Barlow Chairman

> The Rt. Hon. Margaret Thatcher, MP, The Prime Minister, 10 Downing Street, Whitehall, LONDON SW1.

CF, PPS

7th May 1985

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Finally, I believe that it is most important that we take a "GB Limited" and so centralised approach to this matter. Fragmented efforts, no matter how well intended, will hinder the country's progress in developing technological education and

Yomo micerely, William Barbar.

24 April 1985 I enclose a copy of a letter from Lord Weinstock dated 19 April. You may like to incorporate some of the points we makes in the briefing to be provided for the meeting on 21 May. Lord Weinstock indicates that he will not be attending the meeting since Sir Robert Clayton will. But I should be grateful for your advice on his suggestion that Derek Roberts, GEC's Research Director, should also be invited. Mark Addison Miss Elizabeth Hodkinson Department of Education and Science

# NATIONAL ELECTRONICS COUNCIL

Registered Office: 99 Gower Street, London WC1E 6AZ

Telephone: 01-388 3074

Chairman: H.R.H. The Duke of Kent, G.C.M.G., G.C.V.O., A.D.C.

Deputy Chairman: J. S. Whyte, C.B.E.

Secretary: F. B. Berrisford

22nd April 1985

The Rt. Hon. Margaret Thatcher, MP Prime Minister
10 Downing Street
London, SW1

13/4

Dear Prime Minister

Thank you for your letter of 15th April concerning the shortage of graduate engineers and technologists.

This is a subject which has been concerning the National Electronics Council for some time and I would be very glad of the opportunity to join your meeting.

your sincerely

J. S. WHYTE Deputy Chairman

JSW/mjf

# THE GENERAL ELECTRIC COMPANY, pl.c. 1 STANHOPE GATE · LONDON WIA 1EH 01-493 8484

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19th April, 1985

Dear hungaret, alk

and att.

Thank you for your letter of 19th March, 1985 about graduate engineers and technologists.

GEC will, of course, do what it can to help, and I attach a note on the questions in your letter, with some facts about what we are already doing. There are four points which deserve special attention:-

- i) we are short not just of <u>new</u> graduates. The pace of technical change is now such that regular retraining is needed. It is therefore important that a new programme should in some way take account of the need to update and re-train at least some of our existing engineers people who have already proved they can get things done;
- ii) some people learn their engineering as much by action as in the classroom. Many educationalists still do not understand the importance of activity-related

/.....

learning at all levels (primary, secondary and degree) in terms of students' career prospects and the economy;

- iii) many technologists and technicians don't in fact work in the engineering industry at all; over fifty per cent of them are currently employed outside the engineering industry. The Engineering Industry Training Board cannot deal with the problems involved, because while GEC, for instance, is in the Board's scope, many employers of engineers and technologists (such as ICI, BP, BT and Marks & Spencer) are not. Through the Information Technology Skills Agency, employers are looking for solutions in the creative sense and to practical problems (e.g. the question of some sort of rough and ready code of conduct about poaching while we build up resources). But they need Government support. The recommendation by the House of Lords Science and Technology Committee for a new statutory Education and Training Board would be a good starting point provided it is confined to scarce technological skills;
- iv) difficulty and confusion is caused by the unco-ordinated involvement of several Government departments, national bodies such as the UGC,

/ .....

: 3 : educational institutions and local authorities, all of which enjoy a large degree of independence and have vested interests to protect. The new programme needs single-minded direction by a determined Government. Sir Robert Clayton will attend the meeting on 21st May, so you probably won't need me as well. may I suggest that Derek Roberts, our Director of Research, attends because he has a particular expertise in this field and will look after the follow up in GEC. Lord Weinstock The Rt. Hon. Mrs. Margaret Thatcher, MP, 10, Downing Street, LONDON, S.W.1. Enc.

ANNEX

#### PROGRAMME TO INCREASE GRADUATE ENGINEERS AND TECHNOLOGISTS

# (Prime Minister's Letter of 19th March 1985)

(1) Many of the fundamental problems regarding business skills and employment prospects are referred to in the recently published White Paper, but the context of the overall problem is relevant to GEC's specific comments on the Prime Minister's questions.

#### The Problem

- (2) Too few young people master mathematics and science in our primary and secondary schools. It follows that the pool available to train as engineers and technologists at university and the polytechnics is too small to start with; this will be aggravated by the fall of about one third in the number of youngsters in their late 'teens between 1984 and 1990.
- (3) Simply determining new curricula in the schools is no solution. There is a serious shortage of effective teachers, particularly in mathematics. And we do not make the best of what we have because many educationalists do not seem to understand that young people learn in different ways; conventional methods of teaching do not suit everyone. In GEC's experience, some youngsters respond

much better to practical than to formal learning. Young people who, for one reason or another, have rejected (4) conventional education, can learn effectively through activity-based training. The better YTS programmes have enabled the young to understand the real life relevance of subjects like mathematics and physics. The Technical Vocational Education Initiative, the new Certificate of Pre-Vocational Education and the Scottish Education System also encompass such learning styles. Activity-based training should be considered more throughout primary and secondary education in the UK. Of the people who do come through as graduate engineers (5) and technologists, far too many never enter engineering industry or leave it. Some join other manufacturing industry (e.g. ICI and BP) but many go into non-manufacturing companies such as BT and Marks & Spencer (who now recruits engineers but does not train them) and professions such as accountancy and banking. Overall over 50% of technologists and technicians are currently employed outside the engineering industry, which cannot make sense. We have also to recognise that the pace of technical (6) change is now so great that some re-training or extension of expertise is needed for our existing graduate engineers and technologists, possibly as often as every 10 years. Without this we shall not make full use of them throughout their working lives. The UK is slipping behind its competitors in this respect as well as in the provision of - 2 -

new young graduates. It is very important that the Government's new programme should take account of this need. Clearly employers have a responsibility but it should be shared between them and higher education institutions with the Government acting as a catalyst to get things moving, especially in such fields as distance learning and Tutorial Video Instruction programmes.

# Industrial Contribution

make. GEC will, of course, do what it can to help. The answers to her specific questions (i-v on page 2 of her letter), that is the details of equipment, teaching staff, design of courses and career prospects, can be worked out by her officials and GEC managers. A lot is already done. For example, 8 of our staff hold positions as visiting university professors; our central research laboratories teach several under-graduate courses; and the students involved have access to our specialist equipment. And, the technological training carried out in GEC during a 12 month period, amounts to;

New graduates	1,500
Student apprentices	1,800
Technician apprentices	3,000
Craft apprentices	2,500
Mature technicians	
and technologists	11,000

YTS youngsters, customers employees and overseas employers' staff 8,000 In assessing the contribution industry can make, it is (8) necessary to distinguish between "industry" and particular employers, because a relatively small number of high technology companies are in fact doing the larger part of the UK's high technology training. Most UK companies either cannot or will not train for technological skills and are poaching skilled and experienced people from those who carry the burden of training them. But this minority of companies cannot be expected to cope with this indefinitely and, anyway, they cannot do enough unaided. The costs of training technologists are considerable, and if these businesses are to carry out more training and sponsorship to help overcome a broad national problem, they need financial help. (9) Turning to a on page 2 of the Prime Minister's letter, the key subjects for expansion at universities and polytechnics include electronics engineering, computer science and physics; GEC managers can identify appropriate centres of excellence for officials. It may be necessary to introduce more flexible entry qualifications for science and engineering courses at universities, and the better polytechnics must not be forgotten when extra resources are allocated. Incidentally, the progress of the Open Tech started by one of the Prime Minister's former colleagues has been disappointingly slow. - 4 -

Organisation (10) There are 2 key points on b and c on page 2 of the Prime Minister's letter. Because the Engineering Industry Training Board functions (11)in a sectorial manner (GEC is in its scope but, for example, the other companies mentioned at para. 5 above are not), it cannot be effective either creatively or in dealing with practical problems. Many employers of engineers and technologists do not face the cost pressures applying to engineering industry who operate extensively in export markets and there is a need for a rough and ready code of conduct about poaching in order to minimise any inflationary spiral while we are building up our resources of these people. Through the recently formed Information Technology Skills (12)Agency, high technology employers are now trying to identify solutions. But they need Government support. Perhaps the recommendation made by the House of Lords Science and Technology Committee for the setting up of a statutory scarce technological skills education and training board offers a constructive starting point and a way out of the problem with the EITB. Still more difficulties and confusion are caused by the (13)unco-ordinated involvement of several Government departments and bodies in the scarce technological skills area, including the Departments of Education & Science, - 5 -

Employment, Trade & Industry, the MSC and the EITB, besides such institutions as the UGC, the examination boards, the universities, polytechnics and Local Education Authorities. All enjoy a large degree of independence, have axes to grind and interests to protect. This confusion will continue to restrict the process of change and to have an adverse affect on our industrial advance, unless the new initiatives are directed in a single-minded way by a determined Government. 17th April 1985 - 6 -

SCIENCE + TECH!

Employment, Eader Ondustry the USG, the standastical bestides much institutions as the USG, the standastical bearing, the universities, polytechnics and Local Education Authorities. All snjoy a large degree of intercence, have axes to gried and interests to process. This confine to restrict the process of change and to have an adverse affect on our industrial advance, unless the east initiatives are directed in a single-minded way by a determined Government.

17th April-1985





From the Private Secretary

15 April 1985

# EXPLOITATION OF RESEARCH COUNCIL FUNDED INSTITUTIONS

The Prime Minister has seen Sir Keith Joseph's minute of 29 March. She was delighted with the revised statement, and is happy for it to be published in the near future.

I am sending copies of this letter to Rachel Lomax (HM Treasury), Callum McCarthy (Department of Trade and Industry), Richard Broadbent (Chief Secretary's Office), John Bartlett (Bank of England), and to Richard Hatfield and Sir Robin Nicholson (Cabinet Office).

(Mark Addison)

Miss Elizabeth Hodkinson Department of Education and Science

LM.



From the Private Secretary

15 April 1985

### SWITCH MEETING ON 21 MAY

The Prime Minister has considered Sir William Barlow's suggestion that two further people should be invited to this discussion. She has accepted your advice and has accordingly written to John Whyte asking if he would like to come.

(Mark Addison)

Miss Elizabeth Hodkinson Department of Education and Science

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From the Private Secretary

15 April 1985

Thank you for your letter of 25 March to Robin Butler. The Prime Minister is sorry you will be unable to attend the meeting on 21 May, and was very grateful for your interesting suggestions.

The meeting is intended to consist as far as possible of individual industrialists speaking for their companies. Sir Henry Chilver is certainly one of many academics with an interest in the area, but the Prime Minister does not think it would be appropriate to single him out for an invitation. On your point about the National Electronics Council, although the Prime Minister is seeking to avoid representative bodies, she will be taking up your suggestion and inviting Mr Whyte in his capacity as a businessman who also usefully covers the NEC interest.

(Mark Addison)

Sir William Barlow

Eci

hie



# 10 DOWNING STREET

THE PRIME MINISTER

15 April 1985

Vear Th. Whyte.

You will know of the concern voiced in many quarters and especially by business about the need to increase the output of graduate engineers and technologists. Attention has been drawn to this, in particular, by the Engineering Council and in the first report of the Committee on IT Skills Shortages under the chairmanship of John Butcher at the Department of Trade and Industry.

The Government has been considering these representations very carefully and you will have heard that we have announced our intention to redeploy some resources for this purpose. I enclose a copy of the Department of Education and Science press notice. We envisage a special programme costing about £43 million over the three years 1985-86 to 1987-88. I am sure you agree that this programme will be worthwhile only if it receives sufficient industrial co-operation and support of the kind offered by the industrial members of John Butcher's committee. The first phase of the programme affecting student intakes in October 1985 will be launched soon - details should be announced next month. Future phases, and the success of the programme generally, will depend crucially on the willingness of industry to play an active part.

Scottish Development Agency, Government
Departments and the UGC; or would it be better
for each participating company to "adopt" one
or more participating institutions?

(c) would industry be willing to sponsor more students? This is likely to be a very effective way of influencing the career choices of pupils at school and encouraging more young people to study maths, physics and technology.

Finally, if there were time, I should like to take the opportunity to seek your views on what more could be done - and I know a lot is being done already - to change the attitudes of parents, teachers and pupils towards careers in business.

I hope you will be able to meet me, Keith Joseph and other colleagues on Tuesday, 21 May at 1000 hrs in No.10 Downing Street. Would you please let my office know if you can come.

Your sively Margantshaliter Mark.

you will remember that Si George
Jettersons office asked it an atternative
name could be offered, on he could
not attend the Switch meeting.

The attached letter is the result.

CST 18/4.

Thomas Tomben file.

MEA 1174



from the Chairman's Office

CHOPS British Telecom

> 81 Newgate Street LONDON EC1A 7AJ

Telephone number National

International

Telex 883051

Facsimile 356 6640

Mr M Addison Private Secretary to Prime Minister 10 Downing Street London SW1

12 April 1985

Dear Mr. Addison,

I am responding to the Prime Minister's letter to Sir George Jefferson of 19 March inviting him to attend a meeting on 21 May concerning higher education places for engineering technology.

As discussed with your colleague Mr Taylor on the telephone, Sir George will unfortunately be overseas on 21 May and we agreed that Mr Michael Bett, our Corporate Director for Personnel and Corporate Services will attend on his behalf.

Yours sincerely

T A EDWARDS

Director, Chairman's Office

12 APR 1985



CF p.o W.0318 11 April 1985 MR ADDISON, NO 10 EXPLOITATION OF RESEARCH COUNCIL FUNDED INVENTIONS This is to confirm Victoria Harrison's telephone conversation with you while I was on leave, that I am content with Sir Keith Joseph's minute to the Prime Minister, of 9 March. PBN ROBIN NICHOLSON

111 APR 1985

7

#### PRIME MINISTER

# Exploitation of Research Council Funded Inventions

The attached note from Keith Joseph, together with a draft policy statement, reflects your wish that he should go further towards devolving rights in research to the individual researcher. You will remember you saw the earlier version of the draft policy statement in December last year.

Para. 6 of the statement is the key one exorting universities to give individual researchers the opportunity of exploiting their own work. This paragraph also notes that universities should in these circumstances share in royalties because public funds are involved, anidea you suggested after seeing the earlier draft.

Robin Nicholson has kept in touch with DES on the amended proposals, and is content with the draft.

Content to approve Sir Keith's revised statement, for publication in the near future?

Male Addwar

Y so to

9 April 1985

### PRIME MINISTER

You will remember that you are meeting a number of industrialists on 21 May to discuss the "switch", and the increase in resources for technical education in universities.

Sir William Barlow, Chairman of BICC, has responded saying that he will not be able to attend, but suggesting two further people who should be approached: Sir Henry Chilver, Vice-Chancellor of Cranfield, and John Whyte, Chairman of Plessey Telecommunications. DES advise that Sir Henry Chilver would be an inappropriate choice, because he is an academic rather than an industrialist. John Whyte's links with the National Electronics Council (which Sir William Barlow believes to be an important body in this area) would be helpful, but not in themselves a compelling reason for inviting him. However, he could certainly be approached in his capacity as a major businessman.

If you are content with this advice, there is a draft letter to John Whyte for signature attached. I will then respond to Sir William's letter to Robin Butler accordingly.

Male Adolor

Heure signed

MARK ADDISON

4 April 1985

FERRANTI plc TEL: 01-834 6611

3 April 1985

The Rt Hon Margaret Thatcher MP Prime Minister 10 Downing Street LONDON SW1 MILLBANK TOWER,
MILLBANK.
LONDON, SWIP 40S.

CC. Switch file

The to throws please

MER 4/4

Doar Prime Himster

I was very pleased to learn from Derek Alun-Jones of your decision to increase the funds available to Universities to provide places for science and engineering graduates.

The job that Derek has done for the Ferranti Company has been a remarkable one, but our future is threatened by the shortage of technical people, perhaps not so much in our own Company as with our customers. Morale in our Company is very high and we are able to just about recruit the number that we need, but nothing will help us more in the long term than an increasing supply of graduate engineers, both men and women.

Another thing that would help us greatly, and that would be some recognition for our achievements. We are the world leader in our own market sector in the silicon chip business, in inertial navigation and high powered lasers. You yourself saw something of our technology when you presented the Chinese word processor to the Prime Minister of China in Peking.

I know that in the ordinary way, Chief Executives of Companies are not necessarily regarded as the right person to receive an Honour on behalf of the Company as a whole, but the very fact that you asked Derek Alun-Jones to attend your meeting on the University funding is significant.

I wrote originally to the Permanent Secretary of our Sponsoring Department, Sir Brian Hayes, and to Michael Heseltine, Norman Tebbit, Sir Clive Whitmore and George Younger in March 1984, but I would like to strongly appeal to you now for a Knighthood for Derek Alun-Jones.

Your Success.

Basil de Ferranti Chairman

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CF BF 15/4 pl.

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Cruests invited to 21 May meeting.	A +·
	Acceptances
Sis Austin Pierce (British Aerospace)	
Sis W. Barlow (B.I.C.C.)	Personal of Corporate Services) +
Six George Tetterson (B.T.)	M. Bett to other mes tead!
Robert Thornton (Debenhams)	
J.O. Mun-Jones (ferranti)	
S. Tay (Food Motos Co.)	
Lard Weinstock (a.E.C.)	1 + DEREK ROBERTS (DURCTOR of RESE
Six Austin Bide (Glaxo Group)	
* D. A. Baldwin (Hewlett - Packard)	
Sis Edwin Nixon (18M (uk))	
J. H. Harvey-Jones (ICI)	
P. A. B. Hughes (Lagica Holdings),	REFUSED
R.a.C. Menerrey (Lucas Industries)	
Lord Boardman (Nat. West bank)	VISCOUNT SANDON, BEPUTY CHAIRMAN, WILL ATTEND
A. Post (Phillips)	REFUSED
Sis John Clark (Plessey)	J(OLAUY)
Sir Ernest Harrison (Rocal)	
H. Orr. Ewing (Rank Yerox)	
Sis Ray Sisson (Smiths Industries)	
Sis Kenneth Cortield (S.T.C.)	
P. Swinstead (System Designess)	
P. Swinstead (System Resigness) leter Laister (Thorn EMI)	
R.E. Utiges (T.I. Group)	
Six Terence Beckett (Director General of C	BI) (carrer)
X Six Robert Clayton (I.T. Skills Agency	
Cis Faris Tombes ( Rothschilds / Ro	My Rouse)
Sis Francis tombs (kothschilds / kk Robin Luthie (Chairman, S. O. A)	( )
J.S. Whyte (Notional Etchonics	s Council /
J. S. Mayle Claritonial Control	

Je her was a de source of the Iis George Tetterson has been invited to the 21 May meeting. lom Edwards, the livetor of the Chairmani office at ST has asked it, Since dir George is abroad, an atternative is acceptable. ie a series member of Soard with a responsibility for resonnel. I said in principle that sounded On - they are keen to be re-presented! - but asked them to contin in writing with you when they have a named atterrative CST3 4.



#### DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE, YORK ROAD, LONDON SEI 7PH TELEPHONE 01-928 9222 FROM THE SECRETARY OF STATE

Mark Addison Esq Private Secretary 10 Downing Street LONDON SW1

April 1985

Dear Mark,

MEETING OF INDUSTRIALISTS, 21 MAY 1985 WENT - CE Milde?
Thank you for your last. Thank you for your letter of 27 March, covering one of 25 March from Sir William Barlow.

Sir Henry Chilver is very much a prospective supplier with a vested interest comparable to normal universities and to the special proposal of Salford. We would therefore regard it as inappropriate to invite him.

We are not in general looking for representatives of the proliferation of bodies in this field. The National Electronics Council is worthy but not really a major force. It would seem inappropriate to invite HRH the Duke of Kent, but we would be entirely happy to see Mr Whyte invited as a relevant business man who usefully covers the NEC interest.

I attach a draft letter you may care to send to Sir William Barlow.

MISS C E HODKINSON Private Secretary DRAFT LETTER FOR MR BUTLER (NO 10) TO SEND TO SIR WILLIAM BARLOW (BICC)

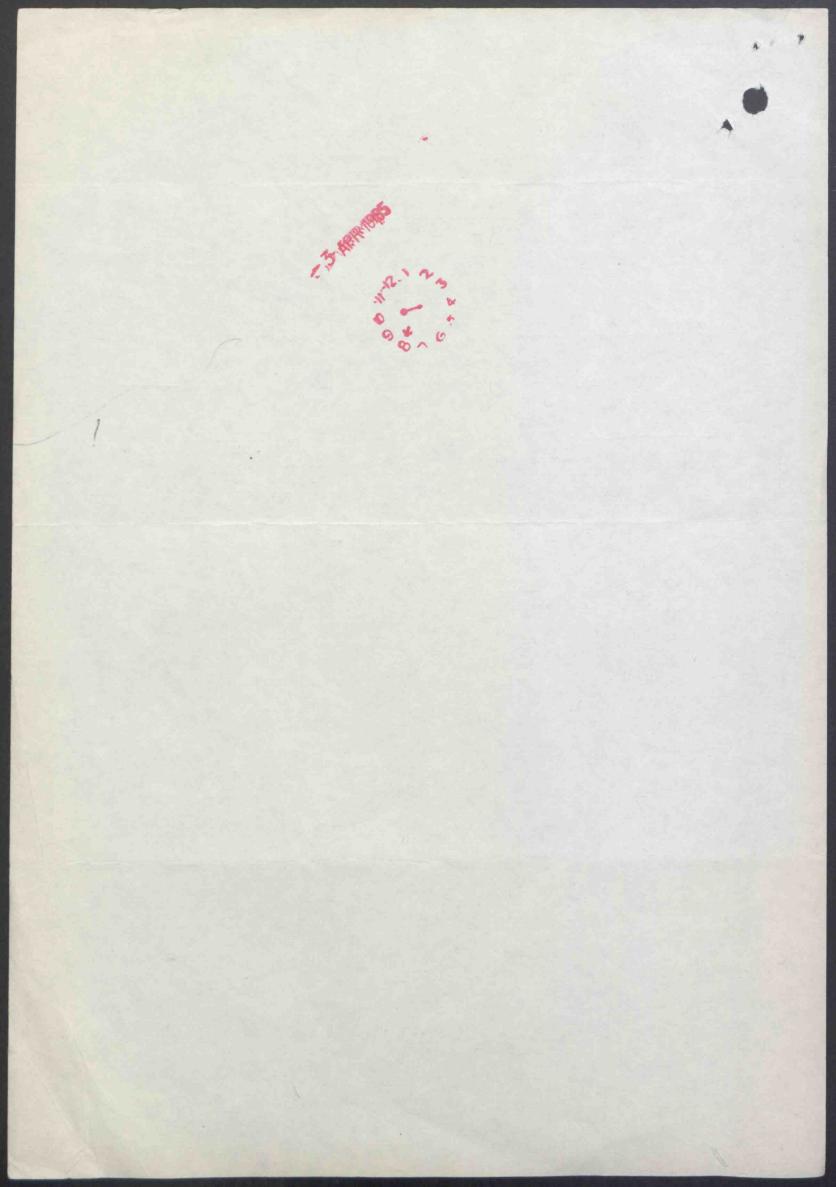
## MEETING ON MAY 21, 10 DOWNING STREET, IT EDUCATION

to Rose Bute

Thank you for your letter of 25th March. The Prime Minister will be sorry that you are unable to attend. The prime Minister will be sorry that

You made two useful suggestions. The meeting is intended to consist as far as possible of individual industrialists speaking for their companies. Sir Henry Chilver is one of many academics with an interest in making provision and I do not think it would be appropriate to single him out for an invitation. Your reference to the National Electronics Council was helpful. Although we are seeking to avoid representative bodies, we are inviting Mr Whyte

as a business man who usefully covers the NEC interest.



Jer Nivela or Is Nicholson from the Cabinet Office would like to come to the 21 May meeting on the Switch Can I say yes ? 34. 233 7089



# 10 DOWNING STREET

Notefer Swith file Elizabet Hodkron original, before the meeting, 1 speels to Rotin Retsine? a 934 9920 etette laid of biefy we wat.

MEA 2/4



## 10 DOWNING STREET

Agreed wit Eddie Gowers
but his tos could come, relindrethy.

MEA 2/4

PART 2 ends:-

Alun - bnes (Feranti) to Am 29.3.85

PART 3 begins:-

MEA note

2.4.85,



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