Foreword

On June 21st 1948 Tom Kilburn ran a program on the first electronically stored program computer in the world. Freddy Williams and Tom had been struggling for some time to make their cathode ray tube store work. Demonstrating the store was the key thing, for without a store the computer as we know it today could never be. This simple machine, always known as the 'BABY', was developed into the Ferranti Mark 1, the first computer to go on commercial sale anywhere in the world. Tom's program was the first program to be written and run.

Some of us here in Manchester felt that the fiftieth anniversary of such stupendous achievements should not go unnoticed. So at 11 a.m. on June 21st 1998, fifty years to the dot later, Tom ran that same program again on a reconstructed BABY that had earlier been ceremonially switched on by the widow of Freddy Williams.

A team of enthusiasts, almost all members or retired members of ICL, researched the design and built the machine from genuine 1940s components. This would not have been possible without the usual ICL drive and enthusiasm, typified at the personal level by Chris Burton (ex-ICL West Gorton) who led the team, and marked at the corporate level by sponsorship of the project. Anyone interested can now see BABY at the Museum of Science and Industry in Manchester. Tom Kilburn says that it looks exactly like the original - except that it's cleaner.

I mention this story because it illustrates vividly what has happened to our industry over fifty years. ICL's latest computer is 25 million times faster, and has 64 million times as much store, as BABY. Many who browse through this book will have been privileged, as I have been, to have been involved in a lifetime's work in what must have been the most spectacular and significant technological development of the twentieth century.

One of the fairly unique things about ICL was the fact that it was a company formed by merger and acquisition into a single business. Most large companies formed in this way remained diverse conglomerates, and the problems of culture shock and internal competition were less severe. It was, I believe, the exciting nature of our business, (and of course the wisdom of our bosses), that enabled us to weld together so successfully. While you could still distinguish a round hole man from a slotted hole man, and both of those easily from the new boys who joined in bits and pieces from the early 1960s, in fact origins were never an influence on doing the right thing for the company. Without that loyalty to the company, and the excitement of striving to beat our competitors to the market with the latest technology, we would never have had so much *fun*. The fact that Hamish has been able to put together another volume of happy recollections is, I believe, a testament to the excitement of it all and the fun we all had.

Peter Hall
Cheshire

Introduction

An ICL Anthology came out early in 1996, and seems to have been pretty well received. One thousand and fifty copies were printed, and I got rid of the last one in May of 1998. The following four months have only produced seven requests for additional copies, which I'm afraid is not enough to justify a reprint. The production figure was not reached by nine-level segmentation or any other professional market forecasting technique; rather it was determined by the number of boxes of copies we could store in the spare bedroom, though I like to boast that it was the best bit of forecasting I've ever done.

One of the consequential pleasures has been the correspondence that followed its appearamce, and the way that I have been happily kept in touch with many ICL people around the world. A lot of letters included excellent stories that I had omitted - hence this second book - and a few contained corrections. Of these the most important are as follows:

The Rime of the Ancient Programmer pp 144-146 This was sent to me without any indication of who the author was, so I attributed it to 'Anonymous'. Then in March 1996, when I was selling copies of the book in the canteen of REA21, two men came past and one said scornfully : 'That poem about the *Ancient Programmer* wasn't anonymous; he wrote it' and pointed to his friend. But then they left before I could make a note of the author's name. So, I'm sorry, but anonymous it still is, although at least I know that's wrong.

Things that gang AWOL in the nicht pp 172-173. Pat and Sylvia Reid point out that the star of the piece was actually Keith Davies, not Ken anybody, and that there was rather more to the final conversation than previously reported. When Jo spoke to John's wife on the phone, what she actually said was something like : 'Tell John not to worry; I have found Keith.' But it was extremely early in the morning, so what John's wife thought she heard was : 'Tell John not to worry; I have found the keys.' And, not recognising the voice, this confirmed suspicions in her mind that John had set up this other woman in a flat. As a consequence when John (entirely innocent) arrived home, he found that he was locked out, with a furious wife utterly convinced that he had a mistress in a flat somewhere.

Let's Parler Franglais pp 195-197. This was also marked 'Anonymous' but in fact should be credited to Ron McLaren.

As for the omissions, I won't list them here because they fill up the rest of this book.

My gratitude again to all contributors, but perhaps especially to Peter Hall, who has not only supplied a Foreword but also virtually a whole chapter's worth of anecdotes, and to Gavin Kirkpatrick, whose happily phrased tribute to Arthur Humphreys expresses the respect and affection which so many of us feel for that great man.

Henk van der Vegt has had the happy knack of sending faxes enquiring about progress just at the moments when the process of compilation seemed to be slowing down, and therefore kept the momentum going.

Denis Hughes very kindly entrusted me with his collection of ancient brochures, photographs and other relics, including a paper by a senior civil servant comparing and contrasting the BTM and Powers-Samas machine ranges; it dates from 1929, was revised in 1932, and could still have

an adverse effect on some blood pressures.

Scientific American generously sent me a copy of their article of August 1890 on the United States census of that year, and the Library of the Institution of Electrical Engineers allowed me to copy an article from the American *Electrical Engineer* from November 1891 with extremely interesting diagrams of the workings of the original Hollerith census machines.

Chris Burton leant me a number of fascinating early brochures, mainly of the first Ferranti computers, but also including the P.C.C. and Samastronic, and covering details of the earliest part of the 1900 story.

Alan Thomas has once again provided invaluable help in the preparation of the book. I'm glad to think that through him the ICL of today has had a hand in this recording of the ICL of earlier years.

I know that the stories repeated here are only another small selection from a wide and deep fund of experience, wisdom and humour. So let me finally say that the in-tray is still open.

Hamish Carmichael, Tolworth, October 1998

Chapter 1 – Early History

This is taken from a document containing the Historical section of the Hollerith Accounting Machines Handbook, published by The British Tabulating Machine Company Ltd, whose address is given as Victoria House, Southampton Row. It is not dated, but probably dates from shortly after the Second World War; though as it refers to Babbage's work as being 'a hundred years ago' it might actually date from the 1930s. BTM had moved into Victoria House in 1929.

It charmingly starts with the invention of the abacus, and its derivatives, the Chinese swanpahn, the Russian stchloty and the Japanese soroban. (In Powers-Samas training schools, our script on history began with the Sumerian clay tablet, whose embodiment of unit record principles was clearly a predecessor of the punched card.) Then it jumps to Babbage, his Difference Engine and his proposed Analytical Engine, then takes a sideways look at the Swedish Tabulating Machines of G. and E. Scheutz, dated between 1837 and 1853. Finally it gets round to Hollerith, as follows:

The art of electric accounting developed from the requirements of the United States Census. The experience of the United States Government in the 10th census of 1880 had pointed to the necessity of the use of mechanical aids to tabulation if the census results were to be published in time to be of any value. In 1880 the census had required more than seven years to complete. So difficult had become the problems of tabulation that one decennial census was hardly completed before preparations were begun for the next.

Towards the close of this census work, Dr Herman Hollerith, an engineer who, as a special agent of this census, had won early recognition as an exceptionally able and accomplished statistician, realised the need of mechanical aids in census tabulation. For this purpose Dr Hollerith developed a system of recording the descriptive data for each individual, or each unit of enquiry, by punching holes in strips of paper (and later in cards) which could be adopted to control electrically-actuated mechanisms in the form of counting or adding devices, either singly or in desired combinations.

At the beginning of the organisation for the eleventh United States Census (1890), the Superintendent of Census appointed a commission of three experienced statisticians to make a practical test of all systems of tabulation that were available for use in the United States Census Bureau. After thorough and exhaustive tests, this Commission decided that census data could be tabulated more economically by the punched card tabulating machine method than by any other method. The Commission stated in its report (30th November 1889) that 'the census records could be transcribed by the Hollerith method of card punching in THREE-FOURTHS of the time required by other systems, and that the data could be tabulated EIGHT TIMES FASTER by the Hollerith electric counting machines than by the other best known methods'. As a result of this report, Dr Hollerith's method of tabulation was selected for compiling the results of the eleventh United States Census.

The success of the Hollerith Tabulating method in that Census attracted widespread attention, not only in the United States but also in other countries, the method also being used at about that time in the compilation of the census of Austria-Hungary.

A census of the British Isles today would be completed in about 18 months and provide far more detailed statistics than was possible either by hand methods or by the use of the Hollerith machines as they existed in the early days.

1890 – The First Key Punch

The cards used in the eleventh United States census were punched by a machine that had at

the front a perforated celluloid board bearing letter or figure characters beside each hole. These characters were the guide for the correct punching of the holes in the card. Over this board swung an index finger whose movement, after the manner of a pantograph, was repeated at the rear. Beneath the arm was a holder in which a card was inserted. When the index finger was pressed down in any of the holes in front of the punch, a hole was punched in the corresponding position in the card at the rear.

The First Hollerith Card

The card of 1890 was 6⅝" long by 3¼ deep and had 280 punching positions, the equivalent of 24 columns. At that time, however, the punching positions were grouped into classes, and not into fields consisting of a number of vertical columns. The vertical position of a hole had no timing significance as is the case today. The card was entirely unprinted and had the bottom right corner removed.

For the 1900 census the card, with holes still grouped in classes, was printed with the same descriptive characters as were contained on the punch keyboard.

Cards were punched at an average of 600 per day, experienced operators producing up to 1,000 cards per day, each having 17 holes.

The First Census Machine.

The machine by which the items punched in the cards were counted or tallied resembled a small upright piano. It consisted of four sections:
– The press, or circuit-closing device arranged for hand insertion and removal of individual cards.
– The counters for recording the added information.
– The plugboard for connection between the press and the counters.
– The sorting box which was a separate unit to the right of the counting machine.

1. The Press

The bedplate of the press was formed by a series of holes or cups containing mercury, corresponding in number and arrangement with the punching positions on the cards. Above this plate was a reciprocating box provided with a number of spring-actuated contact points corresponding in position with the centres of the mercury cups. The cups were electrically connected to binder posts at the back of the machine.

When a card was placed in the press and the handle brought down, all the points that were stopped by the unpunched surface were pressed back, while all those points corresponding to the holes passed through completing the circuits to the binder posts.

2. The Counters

These were 3 inches square and registered up to 10,000. The dial was divided into 100 segments and was covered by two hands, one hand counting up to 100, the other carrying over as each hundred was reached. The units hand moved one point as each hole was sensed, it being borne in mind that this counting machine was designed to count one and only one for every hole appearing in the same relative position. If a card had no hole in that position then none was added.

3. The Plugboard

This merely consisted of the binder posts relating to the mercury cups and those connected to the counters. These binder posts were positioned at the back of the machine and connection between them resulted in the desired holes being recorded.

This simple method of connection between two classes of units laid the foundation of the present-day plugboard and it will be seen that flexibility, one of the chief advantages of Hollerith machines today, was inherent in the machines from the very beginning.

4. The Sorting Box

If, while certain facts were being tabulated, it was desirable at the same time to sort or arrange the cards according to any classification, the sorting box was employed. This sorting box was divided into twenty six compartments, each of which was closed by a lid held against the tension of a spring latch, which formed the armature of a suitable magnet. The magnets were connected to up to 26 desired circuits of the press by binder posts according to the data by which the cards were to be sorted. When a card was put in the press the armature corresponding with the perforation in that card was attracted, thus releasing the corresponding lid which remained open until the card was deposited in that division by hand and the lid again closed by hand.

Later a mechanism was added to convey the card along the top of the sorting boxes until its progress was stopped by the open lid of the selected box, into which the card dropped of its own weight. This principle is in use today in the Powers machine.

Selective Counting.

A write-up of the 1890 census machines in the American *Electrical Engineer* of 11th November 1891 gives the following description of combination counting where a particular counter (and its corresponding box if sorting was carried out) could be caused to operate only when all of a given combination of facts was present, absence of one or more facts producing no result.

'The recording of the number of males or females, married or single persons, etc, in a given district is well enough, and evokes our admiration, but the Hollerith machine is capable of much more than this. In statistical work it is found that the most valuable information does not consist in these elementary items, but in facts that are more difficult to obtain, namely combinations of these items. Thus, it is interesting to know how many dwellers in this country are males and how many are females; also how many are white and how many are colored. But it is at least as essential to know how many of the white males are native-born or foreign-born, and how many are children of native-born or foreign-born parents. Hence it is desirable to provide means for counting not simply the number of white males, but the number of white males, native born, of native parents. Mr Hollerith's machines do this as easily as they do the lighter work. The old familiar principle of the relay is brought into play very ingeniously. Relays are mounted together in the racks at the bottom of the machine. In the case just suggested, the wire is brought from the binding post of the switchboard corresponding to male to one contact of the relay operated from the binding post corresponding to white. From this relay the circuit runs to another relay operated from the binding posts that correspond to native birthplaces. Thence again the circuit goes to the relay operated by the binding post that corresponds to native born fathers, then again to the relay operated by the binding post corresponding to native mother; and finally to a counter. It will be seen therefore that the counter will only be operated when a card which has been punched for 'Native', 'White', 'Male', 'Native-born father', and 'Native-born mother' is put under the press.

If the card is not so punched, the circuit remains open at one or more points and no counting is effected.'

Checking.

The *Electrical Engineer* describes the method of checking thus:

'Mounting by elevator to one of the upper stories of the Interocean Building, one reaches the departments where the machines are mainly in use, and where one is again impressed with the fact that women are entrusted with much of the work. As one enters, the ear catches the sound of crisp bell-ringing, for all the world like that of sleigh-bells. This music comes from the Hollerith machines, on each of which a bell, intercalated in the circuit, rings every time a card is counted, while its failure to ring indicates that there is something wrong with the card, or that is has not been slipped in properly.

Suppose, for instance, that age or sex has not been punched. Where there should be a hole for the plunger pin to go through, closing the circuit, the card is intact. The circuit is open and the monitor bell, just to the left of the press, refuses to give its cheery signal of correctness. It is then a very easy matter to refer back to the schedule stowed away in the old church across the street and fill up the deficiency by the paradoxical process of making a hole.

Suppose it was desired to connect up the machine so that only cards for New York should be counted. A mis-sorted card belonging to Chicago would at once be rejected with as much decision and hauteur as though it were a Knickerbocker turning the cold shoulder to a Pork-Packer. The gang punches of the two cities not agreeing, the wrong cards would leave the circuit open.

Moreover, the same indications are made, of course, by the same holes for all like data. If the cards of electrical engineers were assorted correctly, the hole designating the fact would show daylight through a thousand of them. If a banker fell among the bunch of thieves, the fact would be revealed in a second, and he would be rescued from such bad company. That all are butchers in a bunch of cards purporting to represent them is simply ascertainable by taking one of their own meat skewers and sticking it through the holes that announce the fact. But this could evidently not be done with written cards, and the digging through the 150 tons of them for such as had thus gone astray would be a job preferably postponed until such time as second sight becomes an everyday accomplishment for government clerks.'

Speed.

Cards could be counted at the speed of about 6,900 per day of 6½ hours, a very creditable speed considering that each had to be positioned, the press brought down, and the card removed again entirely by hand.

There is much more in the article from the 'Electrical Engineer', but the above extract is enough to give the flavour of it, and the florid prose style of the 1890s gets tedious if one is exposed to too much of it at once. Another good write-up of the 1890 census story is in the 30th August 1890 issue of 'Scientific American'. The cover of this issue shows the Hollerith machines in use; it forms one of the illustrations to Martin Campbell-Kelly's History of ICL.

The very first anecdote

During the most intense period of work on the 1890 census, several tabulator operators

developed a subtle and sneaky way of getting an unauthorised break. It involved sucking up one miniature cupful of mercury with an eye-dropper and depositing it surreptitiously in the nearby spittoon.

The Beginnings

C.A. Everard Greene was the first executive of The Tabulator Limited and later General Manager and Director of The British Tabulating Machine Company Ltd. In effect, he was the company's first employee. In 1958 he produced a short memoir, entitled 'The Beginnings', in which he traced his involvement with punched cards to a letter, dated 22nd January 1903, from Ralegh B. Philpotts, which more or less offered him a job. It was all very tentative, since it was not yet clear whether there would be any market for tabulators in Great Britain. But as a preliminary, it was suggested that Greene should go over to the States and find out how Dr Hollerith's machines worked. And that suggestion had come about because Ralegh Philpotts happened to be a friend of Robert Porter, the Unites States Census Commissioner. The following accounts of the earliest orders and installations in the UK are taken from 'The Beginnings'.

Woolwich Arsenal, c.1905   C.A. Everard Greene

...... an introduction to Colonel Holden of Woolwich Arsenal Ordnance Factory was secured, and permission given to experiment with Hollerith equipment on their work there. This was the first task undertaken in England and promised considerable publicity if all went well. Eventually a machine was provided and cards drawn up, punch operators obtained and all was in train to tabulate wages and some of their Production Costs. This work proceeded for some time with a fair amount of success, but there was considerable opposition from the staff who were doing the work by hand and were opposed to the introduction of machinery lest they should lose their jobs.

It was not unusual for the Machine Operators to find that the machine would not run due to the failure of the electricity supply to the Machine Room. It was not long before it was realised that the supply cable passed through the room where the clerical staff were working, with the result that wires were cut and the Hollerith machine disconnected from time to time and this, of course, considerably upset results and hampered efforts. This went on for a long time, over a period of several months, and eventually it became very difficult to make any progress at all. So much so that the Authorities came to the conclusion that 'the machine did not offer sufficient advantages over hand methods to make it worth while to introduce them', and their discontinuance was recommended. In due course the machines were dismantled, packed and removed, and during their conveyance through the offices the staff whistled the Dead March! It was a sad ending to a well-tried effort, but it was by no means the end of Woolwich Arsenal as a user of Hollerith equipment for, many years later, under a new regime headed by Reginald Townsend, the then Controller, the machines were given another and very successful trial, and are still (ie in the 1930s) in use by the Ordnance Factories throughout the country for a variety of purposes.

Vickers – the second installation   C.A. Everard Greene

One day, Mr Phillpotts advised that Messrs. Vickers of Sheffield had been approached and were willing to take a machine on trial; contact was to be made with the firm, cards drawn up, and a definite move made to try out the System at River Don Works, Sheffield.

This took some little time and it was only then fully appreciated that machines must record in £.s.d. for which purpose they had not then been made. Eventually, when all the details were

agreed upon, it was decided that I should return to the United States and arrange for a machine to record £.s.d., and then return with cards and punches for installation. At that time, too, there was no Sorting Machine, this operation being done by hand, using blunt knitting needles and a low writing tray with twelve divisions.

Not being au fait with the intricacies of design, it was a big surprise to find that no means at all existed for handling English currency except by the use of fractions. Counters had been designed for most fractions, but not 1/12ths, so that pence presented the main obstacle to begin with. Eventually it was agreed with Dr Hollerith that the recording of pence should take place on two separate wheels representing ½s (half a shilling) and 1/6ths (ie 6 pennies to 6d or half a shilling). As the result recorded on the wheels of the Counter was only a visual one, it was always necessary to write down what appeared on the Counter wheels when necessary to make a record. At first sight it appeared a sorry makeshift but, after a little practice, to copy what was shown on the wheels as '1 & 5' as '11d', '1 & 1' as '7d', etc, became a matter of habit. Much later on, the 1 representing 6d was shown on the wheel as '6' so that it was impossible to write down '11d' as '65'. This was the practice to begin with.

All such obstacles being overcome and cards printed for this method of recording £.s.d., everything was despatched to England, where it arrived safely to be unpacked and assembled for the first time in the history of Hollerith.

This task was, in due time, accomplished, but not without many scares that one part or another had been forgotten in the packing; but all turned up in the end and, after the usual false starts, the machine began to run. Having succeeded in making the machine work, one experienced no great desire to dismantle it again immediately and despatch it to Sheffield, its final destination. So for a while it was operated and tested in London until a sufficient familiarity with it was acquired.

The reception at Sheffield was somewhat frigid, no great curiosity being displayed and, after some weeks in the main office where nothing very serious was attempted, it was transferred to the East End Time Office some distance from the main office. A lad called Goodison was trained in punching, sorting, etc, and he turned out to be a very capable youngster, learning his task quickly, and he soon became really good at the work.

His task was to take the Time Sheets, have them coded, and then punch cards for as many jobs as each man had worked on during the week. The sum total of a bundle of cards represented the wages of each man for a week. Each single card represented a charge, ie so many hours worked by one man on a particular job, to which the hours and the wages had to be charged.

After agreeing each man's wages with the corresponding cards totalled on the machine, all cards for all men in a shop were passed through the machine for a total of hours and money, the latter figure, of course, representing the total wages paid to all workers in the section. After agreeing the total of cards with the total of Payroll, the next step was to sort the cards to Job Numbers and tabulate, job number by job number, for a total of money and time to be charged against each job. These totals charged to each job, when totalled for all jobs, must of course agree with the total Payroll. That is a very simple and typical example of Hollerith work.

Needless to say, agreement of totals was secured with the utmost regularity and without great difficulty and, in cases where there was disagreement, the fault was usually to be found in a wrong hand posting to Payroll.

It is not surprising that in a few months Goodison found the work somewhat tedious, particularly as visits from the Main Office to see how the work was getting on seldom took place. There was no interest and the only curiosity was by a Mr Marshall in charge of the Time Office and all Costs. It was at this stage, comparatively early on in the trial, that it became apparent that no early decision was to be expected, and as it was necessary for someone to be in London to attend to affairs there, a second person was introduced, a Mr F.H. Nicholson, who soon became

a first class Supervisor, watching over the affairs of the Company at Vickers, Sheffield.

Nine months were spent in this way, coming and going between London and Sheffield, in the hope of getting Mr Marshall to make a decision about the introduction of the machines. The Hotel Victoria was a dull place to stay, and there was scarcely any other available, unless one went outside Sheffield, which meant more journeying in and out daily, whereas the Hotel Victoria was handy for Vickers.

Eventually a contract was signed, machines supplied, and from then on a very successfully organised system of Punched Cards was run for some years.

[What Everard Greene doesn't mention is that at some quite early stage Powers pinched the customer from Hollerith, and stayed long enough for the Powers company to become a subsidiary of Vickers.]

Installation number three   C.A.Everard Greene

In the course of another couple of years the Tabulator Syndicate had another installation in operation. This particular system was at the Lancashire and North Yorkshire Railway Company, Horwich, Lancashire. It was obtained as the result of an introduction from Mr Porter to Mr Aspinall, the General Manager of the Railway, who introduced the system under the supervision of the Locomotive Accountant, Mr Tatlow, at Horwich. *[A few years later my father did his own engineering training at Horwich. He would have been delighted to know that in this, as in other technical matters, the L&NYR was ahead of that arrogant lot in Swindon.]* Here we found our good friend Mr W. Partington, who later on became an even better friend and member of our staff, serving Hollerith with a timetable-like regularity and conscientiousness of a type blessed to railway managements from quite early days in the history of its introduction to England. *[Not any more, alas].*

This installation under Mr Partington flourished greatly and was quite a show place of its kind. There were no peculiar complications regarding the recording of sterling, as it was only recording numerals and fractions concerning locomotive mileage and the consumption of coal and oil.

The staff of operators, at a time when school-leaving age was considerably lower than now, consisted mainly of small boys under fifteen who had just left school, and their wage was five shillings per week. Mr Partington had got things down to a fine art, and knew all about 'feeds and speeds' whereby he rewarded them. They were capable of good effort and, as 'Mr P' put it: 'They just look at an engineman's record, "get an eye-full", and punch a card while carrying on a conversation with their neighbours'. The idea was to punch a certain number of cards which constituted a day's work, in a given time. When the task was finished, dependent on the accuracy of the work when checked, the lads were allowed to go home. It was an admirable way of rewarding the boys and the results were excellent. This was the first fairly large task undertaken in the nature of mass production which lent itself to a reward for output.

[It's fascinating to see mentioned, so early in the history, the ability of punch operators to talk – or even sing – on anything that interested them, without the rhythm, speed or accuracy of punching being in any way affected. Some stuffy managers would disapprove of what sounded to them like a lot of idle chatter interfering with the work, and would try to impose silence, but a silent punch-room was usually less productive and certainly always less cheerful than one where the operators had freedom to talk while they worked.]

Bare-faced cheek – and getting away with it   C.A.Everard Greene

During visits to London, as a result of my contact with census work on the Phillippine Census in Washington, I visited quite regularly the offices of the Registrar General at Somerset House, in a somewhat long-term effort to secure a contract for the 1911 Census. This began within a comparatively short time of the formation of The Tabulator Syndicate in 1904, so it eventually turned out to be a matter of about seven years before this contract was secured.

One incident which – at a relatively late stage – had a great effect on activities in this country was the revelation that the special type of Census Machines used in the U.S.A. were not to be had. They could not be supplied! That was that! One admits now to having been shocked, and shocked to a considerable extent! For having by now aroused such an amount of interest in the Census folk, the only thing to do was to find an alternative method and machine, or cry off altogether, something that neither the Syndicate nor its successor, the Company, had ever had to do.

The outcome of this was the drawing up of a card with vertical columns for Census work, similar to the commercial card, instead of the U.S. census card with its irregular field-zones, and the building of a special Counting Machine to count the digits of one column at a time, using the feed mechanism of the ordinary Automatic Tabulating Machine. This is the first known instance of any census having been carried out on these lines, ie on a card with vertical columns and a counting machine that could be made to count on one, two or three columns at a time.

Looking back on the experimental side of this affair, it looks now like a piece of cold-blooded cheek in view of the magnitude of the Census. The experiments were mostly carried out at the works of Messrs Thos Kesnor & Co of Armadale Road, Fulham, and to Mr Norballe of that firm was entrusted most of the work. The counters, in particular, were his design, and the major portion of the work was eventually tabulated on machines built at Kesnor's.

Even now it is difficult to look back on those times without uncomfortable recollections of the nightmare of days and nights *[nothing really changes, does it?]* spent at Fulham wondering when the efforts being made would bear fruit. For a long time the question hung in the balance – could a machine be built that would do the work, or not? Until this was proven there was not a hope of getting a contract for the Census, although at the same time there was no doubting the keenness of some of the Census officials in their desire to do the work by machine methods. Thus it was that night after night the work went on. The counters were the main difficulty. No one of any long experience was available, except Mr Norballe of Kesnor's, and the extent of his experience was a visit of a few weeks to the States on our behalf. The result of his efforts was a machine equipped with counters that were somewhat heavier than ideal, having regard to the speed expected of them.

One can imagine the feelings of The Syndicate as regards the provision of finance for all this work – it was not at all encouraging! In the midst of all these trials (in every sense of the word) a call was received from my brother, then Secretary to Sir Edgar Speyer, a well-known financier in the City of London, to the effect that he wished to see me on a matter of some importance.

Wondering what this might be, I went forthwith to the City. When shown into Sir Edgar's office, he handed me a long letter from Sir Bernard Mallett, Registrar General of England and Wales, in which – to my joy (after all the calls paid and efforts made over the years) – he told Sir Edgar that he was seriously thinking of adopting punched cards and machines for the compilation work of the Census that would be taken in 1911. His object in writing was to find out what he could concerning The Tabulator Syndicate, asking Sir Edgar Speyer to tell him all he knew about it – for he had some doubts as to the ability of the Syndicate to undertake the task. He wasn't alone! This apparently caused considerable concern in the mind of Sir Edgar for, knowing that The Tabulator Syndicate was a small affair and the Census a very large undertaking continuing for a long time, he was in a quandary as to what could be said in reply to Sir Bernard. So with a 'read that' he tossed the letter across to me and, long before reaching the end of it, it was quite

evident how much depended on my reply.

The letter was full of apprehensive queries: Was it wise to entrust a Census undertaking to such a firm? What did Sir Edgar know of the Directors? What risk did he (Sir Bernard) run? Had we any works? What was the capital of The Syndicate? etc, etc.

When I looked up, Sir Edgar asked: 'What shall I say to him?' It was one of those occasions when help from the Almighty is indeed welcome and I surely got it, for without hesitation my reply came: 'This Company has never failed to carry out its obligations for any contract it has undertaken'. I heard later that this was the gist of his reply.

This particular incident has always impressed me as the turning point in the Company's career. Up to that time the contracts were Vickers – No 1, Lancashire & North Yorkshire Railway – No 2, The Great Western Railway – No 3, The Calico Printers' Association – No 4, the British Westinghouse Electrical Company – No 5, and there was little else in sight. The English Census became No 6, and from then on more progress was made.

And now we'll never know   **Rumour**

As we have seen, in the very early days some of the machines sold by both BTM and Powers were manufactured in America. I haven't been able to track down the source of the story that a consignment of these was among the cargo of the *Lusitania* when she was torpedoed off Ireland in May 1915. It's not a major mystery, but it's insoluble, because there's something mysterious about the ship's cargo manifest for that voyage. It is *not* among the rest of the Cunard White Star archive at Liverpool University, where you would expect it to be. Previous writers have found that it was last known to be in the possession of the Admiralty at Bath, and it may not have survived bombing there during the second World War. It's an odd place for it to have been, but lends some credence to the story that the ship may also have been carrying munitions of some sort. So for all we shall ever know there might be some very early tabulators on the bottom, twelve miles off Kinsale Head. But then again there might not.

Chapter 2 – B T M

Rumours   **Gordon Collinson**

We were talking for some reason about how untrue stories can propagate until they become universal, and Gordon gave two examples:
-       it simply isn't true, though many of his colleagues think it is, that he was the only person ever to survive a crash landing in a Typhoon, because that was a type in which he never flew at all;
-       likewise, it isn't true that one end of his moustache once caught alight or was set on fire, and that he had to trim the other end to match; but this was such a fun story that he let it run without contradiction, and particularly enjoys the cartoon to which it gave rise, in which his moustache has a miniature fire-bucket hanging from each end.

Dry Joints   **Peter Porter**

In 1954 at Salford I installed a new 417 Transfer Interpreter, a machine made by Bull and marketed by BTM. This machine had two punched card feeds and a printing unit. Data from one or more cards in one feed could be selectively printed onto matching cards in the other feed, which could then be used for payslips and dockets. The process used comparison of control data punched in the two sets of cards, the compare function being done on a bank of pluggable relays. Intermittent miscompare faults gave a lot of trouble. The source was eventually found by stopping the drive motor and, with power on, turning the machine by hand to the point at which the compare relays were sensed. Then, when the relay panel was flexed, one relay could be heard ticking on and off due to a dry soldered joint in the backplane.

Strangulation in the course of duty   **Alan Wray**

Back in 1956 when I joined BTM, I was assigned to help Norman Woods and learn as much as possible about the early 1200, before going for a spell to help in production in Stevenage. Norman and Mike Crowther-Watson (who subsequently disappeared, with his girl-pulling red Morgan, via CDL) were looking after two of the first four early 1200s at RAE and ARA, both operating wind tunnels. The input and output were modified card readers and gang punches. One day we had trouble with the card reader and no amount of relay cleaning and cam-tinkering would fix it, so Mike called for Tom Cheshire, the electromechanical expert on site. Tom checked and started to work on the card reader, and Mike chatted and leaned on the side, only to press the start button. The machine turned a cycle and Tom's tie disappeared, pulling his chin down almost onto the gear train. Deathly silence. Then Mike took the scissors from Tom's toolbag and snipped off his tie. Tom just carried on, retrieved the piece of his tie, fixed the machine, and wore his funny two-inch tie-stub for the rest of the day.

Saved by the smell   **1956**   **Brian John Smalldon**

1956 was a horrible year. The Russians had blasted their way into Hungary, hoping that nobody would notice because of what the British and the French were doing in Egypt, Nasser had closed the Suez Canal, and petrol rationing had returned to the UK.

I was looking after BTM's customer service interests in the south east corner of Kent, with clients at A.J. Stanton, a finance company in Canterbury, and Pfizers, the manufacturing chemists

with offices in Folkestone. Because of the petrol constraints I was forced to spend most nights in the area, and always used a B & B, or rather a 'commercial hotel', in a large old house in Canterbury.

One night I was disturbed by the noise of lots of people going up and down the stairs, and it seemed to go on for a long time. At length my bedroom door was quietly opened – there was no need for locks or bolts in those days – and after a few seconds a voice said: 'This one's OK'. When I asked what was going on I was told: 'Sorry to disturb you, Sir, but everything's OK'.

At breakfast the next morning the only readily available information was that one of the commercial travellers had been taken to hospital. It was only later that we found out the rest. He was suffering from a whitlow, and had gone to the bathroom for a glass of water so that he could take a painkiller. While there he smelt gas and on investigation discovered a rubber tube leading from the water heater to a bedroom where, upon further investigation, a young couple were found dead in bed. They were a nurse and a porter from Ashford Hospital, and had turned up late in the evening looking for a room. We never knew the background to their tragedy, but were left wondering how many more of us might have gone with them if it hadn't been for the whitlow!

Colour scheme   **Philip Sugden**

The two-tone colour scheme of the 915 tabulator was officially known as 'Brazil and Estuary', but I can't have been the only one who always knew it as 'Khaki and Cow Dung'.

From "*Key to Action*", December 1957

This document is probably the most complete description of the whole of the Hollerith range, when computers were beginning to intrude into the punched card world, but with no clue yet of how quickly and how completely they would turn that world upside down. It contains seventy pages, so is too big to reproduce in full, but here are some extracts:

Starting at the beginning:

Hollerith punched card mechanisation of accounting and statistical procedures relies on the simple fact that numerical and/or alphabetical detail can be accurately and rapidly recorded by means of holes punched in cards. The significance of each hole depends on its position in the card. Electro-mechanical and electronic machines sense, or 'read', the holes automatically at high speed and are able to extract and process all (or any selected) data the cards contain. Once this principle is understood its applications are not difficult to understand.

The hole in the Hollerith card:

In accounting and statistical calculations the same basic figures are often used many times. Manual and semi-automatic book-keeping and accounts production frequently require the same figures to be recorded over and over again. Invoices, statements, payrolls, ledgers, cost sheets, etc, produced by such methods often represent many hours of uneconomical clerical labour, much of it devoted to repeated transcription of common information. Errors occur, time is wasted, and profits are reduced. Management information is often too late to be of practical value.

The Hollerith mechanised method:

Basic data from original sources of information are transferred to machine-punched card records. Once the cards have been created, and the accuracy of the punching has been checked, no further reference to source documents is necessary. The punched card constitutes a permanent, accurate and legible record, one which is always available for processing by Hollerith machines.

Machine accounts-processing reduces the possibility of error and enables accounting production to be performed automatically, accurately and with maximum rapidity.

What the Hollerith punched hole can do:

> FILE itself
> ELIMINATE itself
> SORT itself
> REPRODUCE itself
> POST itself
> ADD itself to another number
> SUBTRACT itself from another number
> MULTIPLY itself by another number
> DIVIDE itself by another number
> PRINT itself on the card
> SELECT itself
> PRODUCE an automatic balance forward
> CAUSE a total to be printed
> CAUSE a form to feed to a predetermined position or to be ejected automatically, or to space from one position to another.

A brief historical section mentions Blaise Pascal's calculator of 1642, Jacquard (1752-1834) and his card-controlled looms, Charles Babbage of course, and Dr. Herman Hollerith himself. He got his Ph.D from Columbia College, but I don't know in what subject.

Then there's the variety of cards that could be produced: 80-column or 38-column, and in addition to plain cards there were dual-purpose ones, pre-punched cards, numbered cards, stub cards, flimsies and padded cards, index cards, tumble and fractional cards, mark sensing cards, all with the possibility of a variety of colours or coloured stripes, cards printed as cheques, and more.

The descriptions of each type of machine start with catchy headlines, on which the marketing department have worked really hard. So we find 'Punching is simple', 'Verifying is positive', 'Sorting is rapid' and 'Tabulating is automatic'. The models operating the machines, or perhaps just standing by them, all wear long skirts harking back to Dior's New Look and emphasising how radically things changed with the end of clothes rationing.

Plugboards get a page to themselves, as do some of the special printing attachments for tabulators. Illustrating these are several pages of typical tabulations, covering quite a wide range of applications.

Then we're back to 'Summary Punching is automatic', nobody could think of a suitable adjective for 'Gang Punching', 'Reproducing is constructive', 'Interpreting is economic', 'Collating is

comparative', 'Electronic Multiplying is very fast indeed' – that's the 542, 'Electronic Calculating is comprehensive' – the 550, 'Electronic Calculating with magnetic drum storage' – the 555 is another machine where they couldn't come up with a distinctive adjective, and then finally we get to 'Electronic computing – the new approach', leading in to a description of the 1201 and 1202 computers.

'The main internal storage of the machine is the magnetic drum. Around the surface of the drum numbers are stored in the form of magnetic spots. These represent either the data on which calculations are to be made or coded instructions for programming. The periphery of the drum is divided into 64 sections or tracks, each track storing 16 words consisting of 40 binary digits; total capacity 1024 words. (The 1202 had a larger drum holding 4080 words). Information is written on or read from the rotating drum by means of a read/write head. Any track may be instantaneously referred to by means of a system of high speed electronic track switching. The drum revolves at 3000 r.p.m., giving a basic word transfer time of 1/800th second or 1.25 milliseconds.

The arithmetic unit consists of four valve shift registers, an adder and a complementer. Additions or subtractions take place during the basic word time of 1.25 milliseconds and usually take 2.5 milliseconds. *[That's what it says.]* The average time for multiplication by a factor equivalent to about 8 decimal digits is approximately 20 milliseconds. When dividing, a 40 binary digit quotient can be found in a maximum of 50 milliseconds.'

Then we get photographs of typical installations, at Northern Insurance, Orient Steam Navigation Co, Hornsey Borough Council, Lines Bros, Carreras, Regent Oil Co, W.S. Shuttleworth & Co, Morgan Crucible and others.

A page is needed to cover the marketing policy, and the terms for outright sale, normal hire, investment rental and maintenance; not very different from QLC or ILC/ARC fifty years later. Another covers the services associated with punched card installations – investigation and reports, education and training, and ongoing support and assistance. A separate page covers the services associated with computers – education, training, investigation, programming, proving programs, etc. 'In this work experienced computer staff assist both with operating instruction and in the approach and technique of "debugging" the program.' One sees that 'program' in this context has already lost the final 'me', but that debugging still needs to live in inverted commas.

The last page of all lists all the sales offices, factories, service bureaux, subsidiary companies and oversea agents. Oversea branches are listed as Alexandria, Auckland, Cairo, Colombo, Karachi, Port of Spain, Rangoon and Wellington. That is impressive enough; but the list of 'Also Service Representatives in:' goes on and on and on: Abadan, Accra, Chittagong, Hong Kong, Kuwait, Lahore, Masjid-i-Sulaiman (Iran), Mauritius, Rawalpindi, Singapore and Valletta; Asansol, Bangalore, Baroda, Chittaranjan, Digboi (Assam), Jamshedpur, Jealgora (Bihar), Jubbulpore, Kanpur, Meerut, Poona, Satura and Secunderabad; Bloemfontein, Dar-es-Salaam, East London, Kimberley, Vereeniging and Windhoek; Bulawayo, Chingola, Kitwe, Luanshya, Mufulira and Que Que. At one level it reminds one of the days when most of the map was red. At another it reminds me at least of Beachcomber's African potentate the M'Babwa of M'Gonkawiwi.

The Chairman's suits   Geoff Cuttle

When Ralegh Philpotts was a young man he inherited from a relative a princely sum – probably

about £100 – and decided to invest the money in some good quality suits. He bought five of them. Their quality was certainly prime. Their durability unquestionable. And he wore them for all business purposes for the next forty years or so. By that time, however, they had acquired a certain greenish patina which, together with their decidedly ancient cut, caused the other members of the Board to think they were not doing the Company's reputation any good. Accordingly they voted something like another £100 to buy the Chairman a couple of new suits. Reluctantly, the Chairman acceded to their request, but only on the condition that the new suits must be close replicas of the ones with which he was so familiar. In Savile Row there was some consternation. Suits had not been made like that since the early days of the century. Eventually, however, an ancient cutter was persuaded back from his long-enjoyed retirement and the stipulated instant antiques were created.

International Relations   Arthur Humphreys

Throughout the long years during which BTM was a UK and British Empire sales agent for IBM machines, relations between the companies were nearly always acrimonious. Professor Martin Campbell-Kelly's *History of ICL* gives a good account of the serious financial effects of this bad feeling. What isn't so well known is that it started from the top, and was personal. Thomas J. Watson of IBM despised Ralegh Philpotts of BTM, thinking him a dilettante, acting the gentleman farmer and playing at running the company rather than making a thorough job of it. (A lot of that was true). Ralegh Philpotts responded with an equal scorn for Watson, thinking him an upstart bumptious foreigner with no manners; so much so that he once kept him waiting twenty minutes in an anteroom before allowing him into his office. How differently would things have turned out if they had been friends ?

Follow-my-leader   Arthur Humphreys

Real pros can skip this paragraph. In the old days of data entry by punched cards, 'verification' was an important control on input accuracy. It worked like this: one operator would take a batch of input data forms and punch a corresponding batch of cards. Both would be passed to a second operator, who would repeat the 'punching' operation on a verifying punch. This machine didn't actually make any holes in the card but instead checked that all the holes punched by the first operator matched all the keys hit by the second operator. The chances of them being identically wrong were too small to matter. If a card failed the verifying process, one common way of indicating this was to invert it when it was squirted out into the verifier's stacker.

It was the Egyptian girls who provided the trigger. They must have been on some scheme where their pay depended on the accuracy of their punching. Anyway, they developed the habit of surreptitiously re-inverting any cards which had emerged upside down from the verifier, and of course the errors than ramified right through the subsequent processes. So from then on our verifiers were modified so that made a little V-shaped nick in the edge of each card – but only in those which had been successfully verified – and all failures were thus impossible to disguise. 'Positive Proof of Verification' became an additional plus point for our sales and marketing people.

Up until then, IBM had always been a bit sniffy about verification. 'Not necessary with properly trained operators', and that sort of thing. But they brought out their version only a few weeks after ours.

Ssssh, don't tell !   **1941-45**

The Letchworth factories of BTM and those of many other companies in the Letchworth and Baldock area such as Spirella were working flat out throughout the war on a variety of defence contracts. Most people could understand that a ladies' underwear company might find its expertise in silk adapted to the production of parachutes. But there was an immense amount of detailed assembly work going on, widely dispersed in the area, whose ultimate function would have been far less easy to predict. Even now, some of that work would possibly still be classified. There are stories, not confirmed – not even perhaps confirmable – of an underground final assembly factory deep beneath some innocuous civic building in Letchworth, where vital war work was performed in darkest and deepest secrecy.

Then a little light is shed by the following letter :

Admiralty, SW1
16th August 1944

<u>SECRET</u>

Sir,

I am commanded by My Lords Commissioners of the Admiralty to convey to you the mark of their appreciation of the rapid and efficient production by your Company of "CANTAB" machines and other special devices for the use of this Department.

2.   I am to inform you that these machines have been put to good use with results of the very highest value to the successful prosecution of the war.

3.   My Lords understand that the fine achievement of your Company in this field has been in great measure due to the work of Mr Keen and I am to request that their appreciation of his efforts be brought to his notice.

I am, Sir,
Your obedient servant
H.V. Markham

R. Philpotts Esq
Chairman
The British Tabulating Machine Co. Ltd.
New Icknield Way
Letchworth
Herts

The upshot was that the Chairman, who probably didn't know what had been going on, and who certainly wasn't supposed to know, got a Knighthood. Mr H.H. Keen, whose practical engineering brilliance had made it happen so successfully, got an OBE.

And now a project team is working under John Harper at Bletchley Park to build a replica of one of the Turing 'Bombes' which kept Letchworth so busy throughout the war.

Honour where honour is due   **George Thomson**

When BTM finally got the alpha tabulator to work, the very first line it printed read:

    F.V.FREEBORN OBE

The great smallpox scare   **Denys Nelson**

In the autumn of 1946 I was appointed to take over from Sam Chastell as Manager for Asia (too grandiose a title for me to retain for long). In fact the area stretched from Karachi in the west to Hong Kong in the east, but only in the countries that were red on the map because the territorial agreement with IBM was still in force.

Exactly a week before Christmas Nora, two very small sons and I set up home in Bombay – a considerable culture shock after wartime England. The first task, obviously, was for Sam to take me on an introductory tour of his 'Asia'. It was slightly complicated, as it turned out, by Cecil Mead's decision to make his first visit to that part of the world. It was in an Air India Dakota that the three of us flew to Ceylon, as it was still called.

On arrival at Colombo airport we were required to sit and wait ... and wait ... and wait. At last an official came up to us quietly and told us that there was a suspected smallpox case among the passengers, and that none of us were allowed to leave until the Medical Officer of Health arrived personally to check. At last, at long long last, he turned up, and promptly confirmed the diagnosis. Consternation! – particularly for Cecil, who was due to return soon to a wife and three small daughters in England. At this point we were told that we could board the bus, but that we must report to the MOH each morning while we were in Ceylon.

The bus dropped us at our hotel, where of course they denied all knowledge of our booking. News had clearly spread fast. Eventually we did manage to get rooms elsewhere.

Next morning the MOH insisted that we be vaccinated there and then. Sam protested that he had a jab in Delhi only the week before, but it did no good – he didn't escape another.

We dutifully traipsed back to the MOH on the next two mornings to be checked for symptoms. On the third morning, though, we were told not to bother him any more as the passenger did not have smallpox after all.

Going Solo   **Arthur Humphreys**

Abridged from a talk given in May 1996 to the Computer Conservation Society

1945 presented the British Tabulating Machine Company - BTM - the opportunity to review the future with IBM, and Christmas of that year gave us the chance of a meeting with Mr Thomas J. Watson in person. Therefore a delegation from BTM - Vic Stammers, Cecil Mead, Albert Cranfield and Harry Waters - sailed to New York on a very slow boat. They were entertained on Christmas Day at Mr Watson's home and he actually served his guests with a glass of sherry !

There had always been arguments between the companies on the issue of royalties, and this

Christmas meeting did not resolve them, but it did set a programme going whereunder BTM would manufacture more of IBM's products and so ease the outpouring of dollars in accordance with the policy of the new Labour Government. There was also set in hand an audit of the royalties paid during the war, IBM alleging that they had been underpaid. These arguments and many visits to IBM by BTM technical staff persisted for the next four years, and of course there were many discussions regarding the implications of the computer.

In October 1949 BTM Chairman Ralegh Philpotts, Vic Stammers and a Lawyer *[presumably Arthur himself]* set out for New York with a determination to settle if possible most if not all of the problems then existing in the relations between the two companies. During this visit Mr (now Sir Ralegh) Philpotts, in a private meeting with Mr Watson at IBM Headquarters in New York, agreed to end the Licensing Agreement between IBM and BTM which had originally been signed by Dr Hollerith in 1907. An interesting fact about the Agreement was that it contained no termination clause and could only be ended by mutual consent. Sir Ralegh died shortly after this, so his final business decision was an event he did not live either to enjoy or to regret.

The new Chairman was Sir Cecil Weir who was delightful, able and inspirational, and later a key figure in the company's expanding future. He had been Chairman, I think, or at least a member of the Allied Control Commission in Germany following the end of the War. At a briefing meeting soon after Sir Cecil's appointment, the then Acting Chairman - one W.G. Dunstall (an importer of ostrich feathers) - explained to Sir Cecil that the agreement with IBM had been ended, but in any event the benefits it had brought to BTM were of marginal advantage - access to all IBM's patents and know-how together with the opportunity to buy any IBM product at IBM's cost plus 10% - and certainly in his view were not worth the royalty payable, which was 25% of BTM's revenue. Someone, however, pointed out that there was a further advantage he hadn't mentioned. "Oh", said Dunstall; "What was that?" It was that BTM did not previously have IBM as a competitor.

Machine Longevity   **c1950**   **Brian John Smalldon**

Raybestos, with offices at Southwark Bridge, had one of our most basic tabulators, with a numerical print bank and four nine-wheel counters. But the fact that in those days each machine had its very own log book enabled us to see that it had originally been installed in the electrical offices in Leeds in the late 1930s. This gave the salesman the opening he wanted, and he was able to convince Raybestos that after fifteen years it was no longer economical to keep their old machine maintained, and they ought to rent a new one with all the latest goodies. They agreed.

That left us with a chunk of iron that was nominally not economical to maintain, and after two whole lifetimes of depreciation had no residual book value at all. But we still managed to install it on a temporary basis at Pfizers and get at least another profitable eighteen months of rental out of it.

Pass me the matches, mate   **John Smalldon**

Many years ago, BTM in its infinite wisdom introduced a card punch called the Keystor which, to put it mildly, was a swine to look after. In those days we used to do something which would be frowned on today, and that was to clean the relay points with a toothbrush soaked in lighter fuel. It wasn't really dangerous, provided one allowed time for the fumes to dissipate before switching on. One day the inevitable happened, and one of the machines had a small fire. I think

the engineer involved was Charlie Abbs. Anyway, he rang his manager to report the incident. The manager, (if I recall correctly, it was Maurice Vincett), took no time at all to work out his response. 'Good', he said; 'Now pull all the other Keystors up around it and leave the building'.

Salesmanship **Ray Kilroy**

Let me tell you how the first commercial order for a BTM computer came to be taken. There was no salesmanship in it at all, though that certainly wasn't what I implied to my colleagues at the time.

In 1954 I was the salesman responsible for selling to the British Transport Commission, and was trying to break into the Western Region of British Railways, which had been a Powers stronghold since the beginning of the punched card era. [*Like Vickers, GWR was an account which converted from Hollerith to Powers at a very early stage.*] The opportunity came when we were asked to put up a proposal for the mechanisation of the Paddington payroll. Our initial thoughts were to base the system on a 542 calculator, but in October 54 the 550 was first exhibited and so we based our proposal on this machine. It would have done the job well, but the prospect was not impressed. Then the 555 loomed on the horizon, so along we went with a second proposal based on this marvellous machine. It would have eaten the job. Still the prospect was apparently unimpressed.

It was as we left the meeting and trudged the length of the long corridor parallel with the station that my greatly respected colleague, Len Gross, uttered the words which have subsequently stood me in good stead. He said: 'We've got to give them what they want!' Putting aside our fears of eight thousand irate assorted porters, drivers and firemen chasing us the length of number one platform after their pay failed to materialise, we put up a proposal based on the HEC 4. It was quickly accepted and the order signed.

Not much selling skill required there, you will say. No, I agree. The consummate skill came in getting them to wait over two and a half years for it to be delivered. It did in the event serve them very well for a good number of years.

Joining BTM **Richard Dean**

In the summer of 1955 I was back at the BAT cigarette factory in Millbrook as an accounting pupil repeating a secondment to the Cost Accounts office. I had already been through the nine months before, but the Training Manager in London said that I had to go through it again as that was the right sequence. Even a plea to go to Liverpool instead was turned down. As a consequence I had plenty of leisure in which to reach the conclusion that opting for a career as a factory cost accountant in Pakistan had been a mistake.

One Saturday morning I was walking along Above Bar in the centre of Southampton and bumped into a man who had been in the same college at Cambridge but had graduated a year earlier. I asked him what he was doing. He said he was working for the Hollerith Company – quite a good job. He spent little time in the office. Mostly he was out visiting customers and advising them how to make best use of their machines. I had incidentally come across punched cards, in French with a Flemish accent, in my three months training stint with a cigarette company in Brussels.

I then asked my friend where he lived. He replied that he did not like Southampton much, but

had found this charming couple with a farmhouse in the New Forest who had taken him in as a paying guest. In his MG he could get to the office, when he had to, in twenty minutes.

As I turned away to continue my morning's shopping he asked me whether I was free that afternoon. 'Why?', I asked. 'It's my yacht', he replied; 'I've been keeping her in the Hamble but that's inconvenient now I'm living in the New Forest and I'm taking her round to Lymington this afternoon where I'll keep her in future. You might like to come for the sail.' Unfortunately, my afternoon was already booked.

Now, spurred on to make a definite change, I applied to a number of office machinery companies – Block and Anderson, Powers-Samas and, of course, BTM. I was called to an interview at 17 Park Lane by John Percival who handled all the recruitment of Technical Servicemen to the Company. I had a short half hour with him in a small and hot office in the rabbit warren at the back of the building. For reasons that I have never understood Percival did not ask me the two questions that every other recruit recollected : 'Do you play cricket?' and 'Have you got a private income?'

Training at Cookham   Richard Dean

Some three months later I joined BTM and was directed by bus, train and taxi to the Training School at Moor Hall in Cookham for my first thirteen weeks of training. Apart from an induction week, and a couple of two week stints on cost accounting (again!) and an introduction to business paperwork, the training consisted of stringing together every one of the one-week or two-week training courses designed for customers, thus covering every punched card machine in the range.

In those days the Hollerith department in a customer was a women's world. All the punch operators were girls, but so were ninety percent of the machine operators. Men were only employed when night shifts were worked. However, most of the BTM employees were men. All the engineers and eighty percent of the Technical Service staff were men, though a large number of women were employed in the Bureaux.

As a result the population at Moor Hall was two thirds female, mostly young unmarried girls getting their first training on promotion from punch to machine operator. This led to a good deal of fraternisation between the men's block and the women's block. Most of the accommodation was strictly segregated in two wooden blocks, linked by a corridor to each other and to the rest of the establishment. All rooms were two-bedded and shared. Some of the girls were on the first floor in the original house in larger rooms, with up to five sleeping in a room.

To attempt to preserve decorum, BTM employed an ogress in the form of Mrs Sahlberg the matron. Her important duty was to patrol the women's block and adjoining corridors in the late evening to ensure that no men infiltrated.

Cookham Memories   Philip Sugden

In order to protect the virtue of the female students at Moor Hall, most of whom were customer staff, it was rumoured that there was a roster of instructors whose job it was to ensure that none of the male students ever got anywhere near the ladies dormitory block. It was further rumoured that, in some instances, this was rather like asking a rabbit to protect the lettuce bed!

The other 'other activity' at Cookham   Richard Dean

Cookham was well supplied with pubs – nine in the village proper from the Station Hotel at the upper end to the Ferry by the Thames. There were also four other pubs in the parish – three in Cookham Dean some two miles apart and up a slight hill, and a licensed establishment called the Quarry two miles north of the village on the bank of the Thames opposite Bourne End. Each course of trainees used to plan to drink a half pint in every pub between opening and closing time one evening. That involved, as we planned it, a walk of six miles, mostly along footpaths, and the consumption of six pints in total. We started at the King's Arms, before confronting the upmarket Bel and Dragon, then to the Ferry, an energetic two mile walk to the Quarry along the towpath, up the hill to the Hare and Hounds, another two miles, then on to the Jolly Farmer later in Cookham Dean. Next a hectic run down the hill by a bridle path to the Station, to end breathless in the Royal Exchange – our usual local – consuming our twelfth half a few minutes after hours by courtesy of a friendly landlord. Typically, however, we failed in our main endeavour, learning a week later that we had missed out the Chequers – also up the hill – of whose existence we had been completely unaware.

A hanging offence?   Richard Dean

I was quietly minding my own business in the entrance hall at Moor Hall one evening when I was approached by two young ladies in all the symptoms of galloping despair. Could I help them? Please! It was urgent!! And so embarrassing!!! Donning my best knight-in-shining-armour manner (the work of a moment, then as now), I asked what the trouble was and how I could help. They had been having a very enjoyable evening, all perfectly harmless and innocent, with a young Australian man who was on the same course. And when they came back from the pub it seemed too early to break up the party and go to bed – besides, he hadn't finished telling them about life Down Under. So, despite it being a flagrant breach of the rules, they had invited him to join them in their bedroom for a little longer. Which he had done, and all was going on swimmingly, all still perfectly harmless and still utterly innocent, when they heard approaching the unmistakable footsteps of Mrs Sahlberg, the formidable moral bloodhound and matron of the place. What could they do? Quick, quick, get into the wardrobe! So he did, and they slammed the door shut on him, just in time. Which was all right, and they waited until the coast was clear. .... And when the coast *was* clear, they opened the wardrobe door to invite him to step out, and found only a body, a very large Australian body, slumped unconscious in the bottom of the wardrobe. But how come? He hadn't been in there long enough to suffocate ... had he? No, he hadn't. What they hadn't taken into consideration was the hook on the inside of the wardrobe door, a product of imperial ironwork at its finest, and it had caught him such a crack on the temple that he was out cold. And so he remained as, with other necessary assistance, I dragged him clear and back to the masculine side of the dividing line. I think they all forgave each other, before the end of the course. (And I don't *think* Mrs Sahlberg ever knew anything about it).

First time in the field   Richard Dean

Initial training of BTM Technical Services in the 1950s involved two three-month stints at Moor Hall, Cookham, split by one three month attachment to a District Office. I was sent to Hitchin, where I fell under the care of the Senior Technical Serviceman, one Monteith.

The office was a smallish detached house just round the corner from the main street. The kitchen

and bathroom were still intact, and the inevitable Australian working there as one of the Technical Servicemen had managed to persuade John Donovan, the manager, to let him live in an empty room not required as office space. Every morning therefore as I arrived in the office at five to nine, (Mr Donovan was a stickler for timekeeping), I was greeted by a delicious smell of ham and eggs from the resident's breakfast.

A couple of days after I had arrived, Monteith decided I should go on my first customer visit to A.C. Delco at Luton. Because of an unfortunate accident outside a pub near his parents' home after closing time, in which he had written off the district pool car, he had lost his licence. Though I had a driving licence, as a trainee I was not authorised to drive a company car. It was therefore agreed that Colin Bence, another of the four permanent Technical Servicemen in the office, would drive.

We set off about ten in the morning for the drive of some ten miles to Luton, which even in those days of poor roads was not planned to take more than half an hour. We had not been driving for more than five minutes when Bence said: 'What about a cup of coffee?'. 'Yes', said Monteith, and we promptly stopped at the next pub. Where, of course, we each drank three half pints of bitter. There was an unwritten law in the office that all rounds of drinks should be closed at each session.

We set off again, and had driven another five miles, when Bence suggested another cup of coffee. A further one and a half pints each were downed. I'm not entirely sure, but I think we may even have had a third cup of coffee.

We eventually arrived at the customer at 12.15 or so, rather than the planned 10.30. What is more we had clearly been drinking. A council of war took place in the car park to determine what we should do now. It was agreed that as she did not know me the Supervisor of the installation should be told that it was my birthday and invited out to a local pub to continue the celebration.

I was introduced to my first Hollerith supervisor, a lady of uncertain age but considerable fire, who like most of her peers combined the characteristics of a secondary school teacher of the old school with those of a prison wardress. She was more than happy to be taken down the town for lunch and knocked back a considerable volume of gin and orange while we consumed more halves of bitter. Eventually we drove her back to her office where it was mutually agreed that none of us was in a fit state to plug the board which was the technical job we had come to do. So we drove somewhat unsteadily back to Hitchin. The whole process was repeated the following week, with rather less coffee consumed en route, and we eventually finished the work involved.

When I put in my claim for one third share of the gin and orange it was thrown out, as a trainee was not entitled to entertainment expenses.

First time in the field – continued   **Richard Dean**

Our local drinking was usually done in the Sun, the principal hostelry of the town. On market days the public bar had a licence for the whole afternoon and on at least one occasion a phone call from the office at four o'clock broke up a convivial session. One evening we were drinking our usual halves of bitter when an American who was a long term resident of the hotel came in. The barmaid was out of the room so, as was his custom, he went behind the bar to help himself

to a gin. While there he was asked to replenish the bar food – crisps, nuts, olives etc. This he was doing when the barmaid returned. She exploded with rage, asking him what on earth he thought he was doing providing more for those gannets to eat who come in, drink only two or three halves of bitter, and eat everything on the bar which was only put there for her *real* customers.

First time in the field – Bence again   **Richard Dean**

Letchworth in those days was totally dry, so once or twice a month the senior factory management of BTM would visit the Sun in Hitchin in the evening. One such evening a large group had come over and a joint party had been held, which ended with Bence and the senior manufacturing manager as the sole survivors. The older man, as the bar closed, announced that the night was young yet, and it would be a pity not to continue the party, and would Bence like to come to his place. Though greeted by a somewhat hostile wife, the two consumed a considerable amount of whisky until the manager, in the early hours of the morning, decided that regrettably they would have to call it a day, and offered to drive Bence back to his digs. All went well until they stopped at traffic lights some 400 yards short of their destination. When the lights turned green nothing happened. Bence saw that the driver was fast asleep. Rather than dig him in the ribs to wake him up, Bence left him sleeping in the car and walked home. As he pointed out when telling this story, the car wasn't still at the lights next morning when he walked to the office, so everything must have turned out all right.

First time in the field – The Cambridge Demo   **Richard Dean**

Towards the end of my attachment I was involved in my first sales demonstration. 'Splinter' Thorne the 'investigator' – as BTM salesmen were called – was attempting to get an order from the Cambridge University Local Examination Syndicate. He had therefore arranged for the van to go to Cambridge and put on a demonstration. The van was a large pantechnicon loaded with a representative collection of card-punching equipment with a sorter and tabulator. It was driven by a field engineer and manned by a woman demonstrator selected for a combination of moderate machine skills and striking appearance.

When Thorne discovered while spoofing for coffee one morning that I was a Cambridge graduate he decided that my presence as a typical technical serviceman would improve his chances of getting the business. I therefore drove up with him on the day to find the van correctly parked on the Syndicate car park. At the appropriate hour half a dozen ladies and gentlemen appeared, not one of them less than 60 years old, clambered with difficulty into the van, and watched the demonstrator – who sported extremely long and brilliantly varnished fingernails – punch some cards, verify them, put them through the sorter, and then tabulate them. I was quietly amazed how she managed to do all this without damage to her fingernails.

Thorne explained to the aged party how these operations tied in with his report on how punched cards could be used by the administration of the School Certificate and Higher School Certificate exams. As we reached the end of the demonstration a man in his early forties bicycled up dressed in a slightly grubby shirt and shorts. He apologised profusely, saying that he had been half way through a casual game of tennis when he remembered that he should have been at the demonstration.

When the time came for questions, the three old ladies gathered round the demonstrator asking her how she could possibly stand a whole day as a punch operator as it was such repetitive work.

The girl could not understand what they were talking about.

Needless to say we did not get the business.

Glesca didnae belang tae me 1955 **Arthur Dyer**

After spending the late summer and most of the autumn of 1955 undergoing technical serviceman's training at Cookham, John Hamilton and I took the night sleeper to Glasgow on a murky Sunday night in November. On arrival at the district office in Jamaica Street there were hurried introductions. Then we were sent out to find lodgings, the District Manager warning us: 'If they've got rooms available, they're no good'. How right he was! We eventually found accommodation at the home of one of the girls in the bureau.

Procrascrascrascrastination c 1955 **Several**

Delivery problems had been getting worse and worse and worse. It was eventually agreed that a woman could conceive, go through nine months' gestation, and give birth faster than BTM could deliver a handpunch. Something had to be done.

Was this the real reason why the company adopted computers?

The vital advice c 1957/58 **Hugh Smith**

When I was a very new boy two senior colleagues gave me, with touching earnestness, two bits of advice which were so strikingly different that they have remained with me ever since. Richard Butland told me: 'Don't ever send out a letter containing prices without having them checked by John Santry (the regional administrator)'. And Arthur Quayle – who was subsequently responsible for the observation (useful after heavy evenings) that the last train into Brighton is also the first train back into Victoria – told me, as the most important thing for me to remember in the furtherance of my career: 'My boy, if you're ever sent out to operate a collator, *remember it has an uphill feed*'.

Not on *my* Syllabus c1958 **Arthur Dyer**

Freddy Freeborn was giving a course on the 1201 computer to a class of BTM district managers. It was probably while he was describing the numerous – and somewhat arcane – register shift instructions that one of the class became rather bored and remarked: 'I take it that this programming business is really just a sort of mental masturbation'. Quick as a flash Freddy replied: 'Oh, I hope I haven't taught you that.'

Seymour Dearden – 1 1950s **Arthur Dyer**

He came into the office in an exceptionally good mood one day, exclaiming: 'Good old Sue ! She's done the double.' It turned out that his daughter's 21st birthday had been marked by full-page photographs in both 'The Field' and 'Country Life'.

Seymour Dearden – 2 1959 **Arthur Dyer**

At the time of the BTM/Powers merger, Seymour was BTM's Southern Regional Manager, and

ended up with the equivalent position in the new ICT organisation. Because of all the potential for jealousy and ill-feeling, the new organisation was the most closely guarded secret. Nevertheless, at least 24 hours before the announcements were made, one of the cleaners in the Regional Office was heard to say to another: 'Well anyway, I'm glad Seymy's all right'.

The 915 and the matchbox   **Martin Wright**

Not all technical progress is forwards. For many years the plugboards controlling Hollerith machines consisted of rectangular panels containing many holes. On the machine side of each hole was a metal shoe which made contact with a spring on the machine. On the outside, each hole was a socket into which one end of a flexible 'plug' could be inserted. The result was heavy and expensive, but reliable.

When the 915 tabulator came along, some bright spark redesigned things so that the plugboard was just a simple plain panel with a rectangular array of holes. The plugs now sported large pointed ends and retaining springs, and acted as plugs and shoes at the same time. Unfortunately the shape of the plugs was now such that they would readily spear anything that came in contact with them.

It was during a course at the Moor Hall Training School, long before the days of no-smoking policies, that a matchbox became impaled unseen on such a board. When it was inserted in the 915, it bent a goodly number of the receiving springs beyond repair. That training course came to an end for several weeks, as the number of similar incidents occuring about that time was such that the entire UK supply of replacement springs was exhausted.

Gimme dat 'ting'   **Anthony Adams**

I think I must have been on about the last ever 550 course at Letchworth, as by this time the machine was getting a bit the worse for wear, and not all the faults we were getting were set up by the instructor.

One Friday morning during a practice session we had a power supply problem. The group diagnosis was a duff capacitor – quite a large one. By the time a replacement had been found and fitted it was almost midday. As old students of Letchworth will remember, this was the time for packed lunches and the much-awaited journey home for the weekend, and was signalled by time pips broadcast over the sound system. Well, there we were, all in going home mode, when the instructor pipes up: 'Come on, lads, switch on!' What happened next couldn't have been better scripted by Basil Fawlty. There was one almighty bang, followed by a snowstorm of silver and tissue paper. At that precise moment the time pips sounded and there was a mass exodus from the room. Nobody ever admitted connecting that capacitor the wrong way round.

The real flavour of the merger   **Geoff Cuttle**

A discussion was going on in Victoria House, very early in the days of ICT, about how a particular customer problem might best be approached. None of the ex-BTM people present could suggest a viable way forward. Impasse. Then a small voice suggested: 'You know, we ought to try talking to these Powers people round the corner. You never know, they might turn out to be human, just like us!'

Chapter 3 Powers-Samas

The vital information   Ron Driver

I joined Powers-Samas Accounting Machines Ltd in December 1946, straight from the Royal Navy. (I had been a pilot in the Fleet Air Arm, a much less dangerous occupation). My appointment was Trainee Technical Adviser and Accountant, subject to my obtaining a BCom or professional Accountancy qualification by external studies.

My first boss was Hector Prytz, the Area Sales Manager for Kent, Sussex, South London and part of Central London. He was a very shrewd businessman with good negotiating skills. One of the first things he taught me was that in spite of the (then) strict licensing laws, you could always get a drink "Where they make the laws and where they keep them". To prove it, we walked down from the Holborn Office to the Law Courts in the Strand and, sure enough, he knew where the bar was, and it was open.

The autocratic manner, c. 1947   Bill Bailey

There was a chance to install a completely new 40-column card system, based around a P3 tabulator. The essence of the application was stock control, dealing with a variety of discrete items. Somehow it fell to me to do a presentation to the customer, and I described what seemed to me to fit the bill, an absolutely standard card-per-item system. When I finished, there was no shilly-shallying; just a terse: 'Yeah, that's just what I want; get it put in.' The system went in, and worked, and became a model for others in the book trade. But that - thankfully - was my only encounter with Robert Maxwell.

The P.C.C.

Excerpts from two versions of the Powers-Samas brochure. Neither is dated, but the one which I presume to be earlier - because it shows an artist's impression of the machine rather than a photograph - has been rubber-stamped 26th July 1956 by a Customs Agent in Sydney.

The earlier brochure says: 'The instructions for a complete accounting procedure are conveyed to the P.C.C. in the form of four punched cards, each capable of expressing 40 instructions, making 160 instructions available to the programmer. The cards are permanent; after use they are easily filed, ready for re-use at any time.' By the time the second brochure was produced, the card input mechanism for program input had been replaced by the riveted program boards which were such a characteristic feature of the beast.

Both brochures have a photo of a young, indeed raven-haired, Peter Ellis talking to two colleagues. The blackboard behind him is headed 'Consumers Billing', and under the sub-heading 'Domestic' shows cards labelled 'Meter', 'Fixed Charge' and 'Arrears' as input to a box called 'Computer'. At the right is a section of program, 14 instructions long, to which Peter is pointing. The caption reads : 'In keeping with its long tradition of service, Powers-Samas is organised to assist P.C.C. users with their programming work, and to this end have established a Computer Department. Among the functions of this department is the study and development of programming techniques and the establishment of actual programmes. Illustration shows three members of the department devising an actual P.C.C. programme for electricity billing.' If the colleague in the photograph is John Lilley the brochure would have included the entire staff of

the Computer Department, demonstrating what a comparative sideshow computing still was at that time.

Elsewhere one brochure contains a flowchart (called a 'schematic programme') for a Payroll Coin Analysis job, and part of the associated coding sheet. The problem is defined as:

- To analyse net pay into £1 notes, 10/- notes, silver (ie half-crowns, florins, shillings and 6d pieces), 3d pieces, and pence.
- To accumulate the net pay and the coin analysis, punching the results into interspersed blank cards at the end of each pay station.
- To check all the above operations.
The other shows a stores accounting application. Requirements:
- To maintain balances in quantity and value for each stored item.
- Issues are to be priced at the current average price, and separate records are required for 'paid' and 'unpaid' receipts.
- The new balances are to be signalled whenever an unusual variation in average price is detected, or whenever the quantity balance is below minimum or above maximum.
The associated coding sheet names Gordon Riocreux as the author.

In both brochures one page is devoted to 'The P.C.C. applied to Payroll Calculation', and shows how all the brought forward figures are reproduced from last week's card, the variable amounts of hours worked and overtime hours this week worked are punched, and the P.C.C. calculates gross pay this week, gross to date, tax to date, tax this week, superannuable pay, superannuable deduction this week, and net pay. What is remarkable is that the card does not allow for gross pay this week exceeding £9 19s 11d, or for gross to date exceeding £999 19s 11d. What a difference forty years of inflation have made!

The brief description of the machine explains that the card track runs from the magazine or hopper to a first sensing station, then to a check sensing station, then to the punch unit, then to a further check sensing unit, and finally to the receiver or stacker. In logical order they are shown from left to right across the page: M - S1 - S2 - P - S3 - R. But the accompanying photo, to take which the covers had to be removed from the left side of the machine, shows the units in the reverse sequence S3 - P - S2 - S1 with the magazine out of shot to the right and the hopper invisible to the left.

This photo is captioned: 'The sensing and punching units. Mechanical, therefore positive.' There could hardly be a clearer statement of the Powers-Samas company's philosophy that electricity is dangerous and untrustworthy stuff to deal with.

The main memory was on drum, with one track each for input and output, and four tracks of main memory providing a total capacity of 160 numbers each of 16 sterling or decimal digits plus sign. 'The P.C.C. can work directly equally well with either decimal quantities or sterling amounts. Thus no time is spent converting from the normal decimal or sterling input to any other notation such as binary, and no time is lost when carrying out the reverse conversion operation from binary to decimal. Thus the majority of each machine cycle is freely available for direct computing operations.'

In the current climate of moderate panic about the Millennium Bug, I'm happy to remember that the very first problem that we were set by John Sisam in the P.C.C. programming course in

November 1958 was to read a series of year numbers and decide which ones were leap years. We had of course to include the check that a century year is only leap if it is divisible by 400. Several instructions could be saved by reading the data as though the tens and units came after the decimal point. What a magnificent preparation for the problems of forty years later!

The SAMASTRONIC

Another piece of historical archive recently recovered from Australia is a copy of the brochure for this fearsome device. The brochure has survived a great deal better than any of the machines it describes. It was published by Powers-Samas Accounting Machines (Sales) Limited, a Company of the Vickers Group. Typically, it does not show a date of printing, but a specimen invoice from a pharmaceutical company illustrated in the centre pages is dated 10th October 1956.

One should probably treat this machine in two parts - the printing mechanism, which was reasonably successful, and the arithmetic unit, which was anything but.

'The printing principle is unique. 140 styli are set in a bar which oscillates continuously in a lateral direction across the path of the moving paper. The styli are, as it were, scanning the paper as it moves forward, and, if in contact with it, each stylus would draw continuous lines in a fine zigzag pattern. Instead, each activated stylus touches the paper only intermittently - at intervals along the scanning path - thus forming the character by a pattern of dots.

'The forming of the characters is initiated by discs with metal inserts in their rims, which transmit electrical pulses to the styli at the requisite time intervals. There are 50 such discs, one for each of the available 50 characters, and each disc can cause its own character to be formed by any one or more styli in each line of printing.'

Quite elegant characters could be formed by this mechanism. For example, the top and bottom horizontal strokes of a letter 'E' would contain six dots, the middle bar four dots, and they were timed to print on that leg of the zigzag scan which would mean that the strokes sloped gently up from left to right. This was found to give a more pleasing appearance to the printing than if such strokes drooped towards the right.

'The printing speed achieved is more than 300 cycles per minute, ie more than three times as great as the speed usually associated with Tabulators of more traditional design. Each line, printed at one machine cycle, can comprise 140 characters. This is nearly twice the number printed at one stroke by conventional machines.

'An outstanding feature of the machine is the facility to print phrases, dates, symbols etc made up from characters selected from the repertoire. A single phrase or a number of phrases can be printed, up to a total of 32 characters, all from one control hole.'
Examples of such phrases are given:
  2½% DISCOUNT FOR CASH BY 10TH OF MONTH
  BALANCE OWING IS SHOWN IN LAST COLUMN
  THIS WEEK YOU HAVE A TAX REFUND

'Character spacing is that commonly used in many typewriters, namely, ten characters to the inch. The height of the characters is determined by the speed at which the paper is fed. Thus the

characters are ·113" in height if paper is spaced at six lines to the inch or ·085" in height with eight lines to the inch spacing. If specified, provision can be made for automatically increasing the height of characters in a single line, eg alongside a total, to one and two thirds the height of normal characters.'

'The paper feed is designed to feed conventional marginally-punched continuous stationery of any width from 3¼ inches to 18¾ inches and of a maximum depth of form of 16 inches. The vertical pitch of printing is in multiples of one sixth of one eighth of an inch by carriage setting. Card-operated spacing in either of these multiples, to a maximum of one inch, can be effected either before or after the printing of that card. Fully compensated long feeding facilities are available giving a maximum paper throw of 16 inches, and operated by means of control holes in cards, or on the printing of totals, or under the control of a paper-feed 'programme' initiated by a removable disc. A series of these discs (which can be preset by the operator for differing forms of stationery) can be kept, so providing for instant change of paper-feeding programme by merely removing one disc and substituting another.

'The Samastronic Tabulator is equipped with two carriages which allow two webs of paper to be fed side-by-side without overlap. Either carriage can be set to feed for 'totals only' tabulating whilst the other is set for 'listing'.

'Adaptable to Stationery :

An important advantage afforded by the new printing process is the facility with which printing can be accommodated on existing forms, obviating the need to design stationery to suit the machine.'

But on the very next page of the brochure, it says :

'Substantial Savings in Stationery Costs :

Not least among the advantages provided by the unique stylus printing method is economy in the space occupied by the characters. For example, the width of paper required to accommodate a line of 140 characters is some 20% less than that needed with more familiar processes. Thus, many business forms can be reduced in size and cost with, quite often, some gain in clarity, effectiveness and distinction. The economies which can be made in this way (*permanent* economies, it should be noted) can be very substantial indeed.'

Even after all this time, I haven't the heart to transcribe any of the description of the Decoder, the Adding mechanism, and the Automatic Total Attachment, or of the multiple Connection Units that provided such theoretical flexibility in their use. They were awful, and brought Powers-Samas to its knees.

On a more cheerful note, the list of overseas dealers includes Messrs Lambrinopoulos and Goumas, of Athens, whose show-room windows, when I saw them in mid-1959, displayed the logos of just about every single company active in the whole of the business equipment and data processing industries. Probably a couple of rogues, but they were very friendly and hospitable, and told me where I could best get my car serviced. It needed it after the horrors of driving down through Yugoslavia. It was a Triumph TR2 and one stretch of 200 miles took us no less than 20 hours, during which we were actually overtaken by one local Jehu in his pony and trap. The

return journey, by ferry from Patras to Brindisi and then up the length of Italy, was a comparative doddle.

The Sorrows of Samastronic - 1   **Sandy Walker**

I was in Berlin in 1957 with the first Samastronic supplied to the Electricity Board. Among its many problems were the oscillations on the long unsupported vertical drive shaft, but what I remember most vividly is the unreliability of the paper-throw mechanism. Some bills came out 3 inches high, some 18 inches. The system was printing the form as well as the data, and we never got it going well enough for a formal opening. It was summed up best by the engineer who, at three in the morning, flung down his screwdriver, cried out: 'It'll never work!', and burst into tears.

The Sorrows of Samastronic - 2   **Sandy Walker**

So I sent a memo to Rufus Impey, with a copy to Arnold Jewitt, suggesting that the company should not ship any more Samastronics in this condition. The reaction was a ferocious phone call, telling me in very plain language that it was not my job to criticise company products.

Powers Samas and Electricity   **Sandy Walker**

Wandsworth Borough Council had a problem - instead of stacking properly, cards were simply floating out of the back of their 40 column tabulator. So, as a new boy, I was taken down there by the experienced Roy Hill to sort it out. It turned out to be a problem with static. Roy's solution imaginatively involved a bucket of water. Which might have been all right if the rate cards hadn't gone straight into it.

Powers Samas and Geography - 1   **Sandy Walker**

Roy Hill had been on Sunderlands during the war. That may have had something to do with his decision to fit his car with a very early form of motorist's magnetic compass. To exploit this device to the full he decided to do without a map, because he could get around London purely on compass directions. That certainly had something to do with the reputation he acquired for always being late for customer meetings.

Powers Samas and Geography - 2   **Sandy Walker**

I was allotted a sales area that stretched north and north-east from London. I remember it included Bedfordshire in one direction and Norfolk in the other. I also vividly remember Alan Haslam, the Regional Manager, telling me that I had a travel budget of ten shillings a week.

Powers Samas and Geography - 3   **Sandy Walker**

Powers Samas tried to give nice Christmas gifts to its customers - the glass ash trays in the shape of a punched card, with the obligatory corner cut-off, will still be familiar to many people. But this year it was delft lamps in boxes, and I had forty of them to distribute in the three weeks before Christmas. But I obviously couldn't carry them all with me, and I couldn't possibly return to the sales office in London after each delivery. The solution turned out to lie in the excellent service of the left luggage office at Bletchley Station.

More about Mapping   **Roy Smith**

Following the publication of a description of the map-plotting application (*An ICL Anthology pp 28-29),* Roy Smith told me some further details of the whole affair. First there was the matter of the division of the spoils. Roy's bonus for selling a Powers 3 40-column Tabulator, plus all the work of application design, plus all the ongoing support and advice throughout the project, was £15. The total number of 40-column cards used was of the order of 1½ million. Therefore Roy had to advise Supplies Division that the customer wished to order a large number of card-trays and filing cabinets to house all the record cards. The Supplies Representative toddled along, picked up his order, was awarded £150 commission, and was never seen there again.

Frank Perring of course wrote his thesis about the project and was awarded his Ph.D on the strength of it.

Then, on 23rd May 1957, there was a demonstration of the scheme to the Royal Society. This is still probably the only occasion when standard business machines have been demonstrated to the Fellows, at Burlington House. Dr Perring even arranged for Roy and himself to join the Fellows for dinner before the Conversazione. In the event, the evening was a great success, and the demonstration attracted a great deal of interest.

When the Map Scheme finished, with the publication of the Atlas of British Flora, the machines were transferred to the Institute for Terrestrial Ecology, and Roy lost contact with them. Thirty years later, Roy saw Frank Perring again in a nature programme on TV, and after getting in touch by phone, had lunch with him in Cambridge. In the course of the meal Roy learned that Dr Perring had tried hard to persuade ICL, or the Natural History Museum, or the South Kensington Science Museum to preserve the machines, but all his pleas had been rejected. Then, through the University of Warwick, contact was made with the Digital Computer Museum in Boston, and that was where the machines eventually ended up. As Roy puts it, Powers-Samas finally broke into the USA.

Putting our trotters in it   **Cecil Kellehar**

There was a Punched Card Reunion at Stevenage in October 1996, organised by Adrian Turner, and Cecil brought along some nostalgic items in the form of old style sales giveaways - the Powers Samas card-shaped glass ashtray, for example, and a very natty shoebrush with integral shoehorn in top quality pigskin. 'We made a terrible mistake with those', he said, 'We sent a huge consignment of them out to Pakistan!'

A passion for order   **Peter White**

Two of us were sent up to Crewe, because there was an urgent need for extra operators to run the payroll for what was called the London Midland and Scottish Railway, though I suppose by then it had actually become the London Midland Region of British Rail. The P.C.C. which did the payroll would have to be run all night, and we were to keep it fed while the regular daytime operators had their time off. We were given strict instructions as to the sequence in which the cards were to be fed into the P.C.C., and how to lay the trays out in exact processing sequence when they were filled with cards removed from the stacker. Apart from that, we really didn't understand what was going on, and we certainly didn't understand how the P.C.C. worked.

Nevertheless, we determined to make sure that everything went perfectly, and that the whole place would be immaculate when the day staff came in to take over. So it was upsetting when some of the cards emerged from the P.C.C. upside down - there must have been an intermittent fault in the feed rolls - because the output trays didn't look as tidy as we had been told they ought to. Still, it wasn't very difficult to pick out the offending cards and turn them the right way up, and then everyone could see what a splendid job we had made of our night's work.

Came the dawn, and we lined up the final output trays, yawning by now but looking forward to the forthcoming thanks and congratulations. In came the supervisor, and cast a quick eye over our handiwork. 'That's funny," she said; 'Didn't you have any errors?'

Chapter 4 - Ferranti

The Essence

Ferranti was not like other companies; the attitude was always somewhat different. The best explanation for this was given by Sebastian de Ferranti at the celebrations of the 50th Anniversary of Manchester Computing in June 1998. He said: 'When a proposal for any new project was submitted to my father, there were only two questions which he would ask: "Is it going to ruin me?" and "Will it be interesting?"'

More of the Essence   **Peter Hall**

One of the characteristic oddities about Ferranti was that a departmental manager could do pretty well whatever he liked except spend company money (that meant the family's money) on capital items. For that, however trivial, approval had to be obtained from a mean-minded Scot who had the Chairman's authority on such matters.

When I was having a lot of Union trouble I sought ways of improving the workers' lot. Thus it was that I applied for permission to have a simple corrugated iron cover erected over the bicycle racks. There were numerous complaints about having to ride home, after a wet day, sitting on a wet saddle.

In spite of the known strict control over capital expenditure, I was a little surprised to get a reply along the lines of: 'No way could this be approved. The problem could easily be solved. Please find, under separate cover, 200 plastic bags and 200 rubber bands. Issue these to the users of the racks for use on their saddles.'

Mighty Oaks from little Acorns   **Frank Cooper**

The little acorn in this case was the simple transposition of two characters.

I was a development engineer with Ferranti, working on the Manchester/Ferranti Mark 1 computer, in particular on the Magnetic Drum Store.

Bill, one of my colleagues, had been given the task of developing a two-valve amplifier for the synchronising and address tracks on the Drum. He decided to use a sub-miniature pentode which had military type number CV465, and was made by Mullards.

A requisition was sent to the Purchasing Department for ten of these valves at a price that was probably about 10 shillings each. Unfortunately, a typist in Purchasing transposed two digits and the order went out to Mullards for ten CV456s.

Mullards wrote back to say that they had never made this type of valve but suggested that Cossors might be able to help. Purchasing went ahead and ordered from Cossors without consulting Bill!

Some days later I happened to be at our receiving stores when a large railway lorry drove up outside. The driver wandered in clutching his delivery notes, saying he had some large crates for us. As the paper work seemed to be in order the store-keeper accepted these crates, although with raised eyebrows. (The crates were about a foot square by about two foot six inches high, and quite unlike anything he normally received.)

As I recognised the order number as one of ours, I contacted Bill who came rushing over. Each crate contained a spring supported canvas bag which did indeed contain a valve type CV456. This was a large quartz envelope about six inches high and about three inches diameter, estimated probable cost about £50. It turned out to be a hydrogen thyratron, once used in wartime radar sets.

By this time we had worked out that an error had occured in specifying the type, and this was eventually laid at Purchasing Department's door - mainly for not checking with the engineer when Mullards rejected the order.

The Purchasing manager contacted Cossors and humbly grovelled. Cossors hummed and ha'd a bit but eventually agreed that as Ferranti were good customers etc. they would take these CV456s back.

The correct CV465s were duly ordered and received and development went on its merry way. You might think that was the end of the story. WRONG!

Soon after this event, Ferranti received an order for a *second* Mark I computer.

Our very small drawing office was doing sterling work producing circuit diagrams from the backs of old envelopes, and wiring diagrams from actual chassis. They simply had not been able to produce a full parts list for the whole computer. After much head-scratching someone had the bright idea of getting Purchasing to reorder everything which had been ordered first time round on computer order numbers. Yes. You've guessed it!

An order went out to Cossors for ten CV456s, and in due course the selfsame lorry with the selfsame driver and the selfsame crates were delivered to our receiving stores.

Returns? Cossors this time didn't want to know us. The valves were offered for sale but no one was interested. Even the surplus merchants wouldn't take them at giveaway prices.

So the crates languished in the stores collecting dust, until at last it was decided to scrap them. Then it was that the next snag was discovered: each canvas bag had a warning notice to the effect that these valves contained radio-active material and therefore they must not be broken or disposed of in normal scrap.

Steps were taken to find a suitable means of disposing of them, and at last they went.

I don't think anyone ever worked out the total cost of this little acorn, but it must have been considerable.

Sweetening the NRDC   Peter Hall

Soon after I became Manager of the Ferranti Computer Department in the mid-fifties we discovered that we had made rather too much money out of NRDC - the National Research and Development Council, a quango that supported new technology at that time. Our Chairman, Sir Vincent de Ferranti, would not hear of not owning up. We would win brownie points if we came clean, and if we did so with care we might even be able to keep some of the spoils.

Sir Vincent knew his way around, and I soon found myself lunching at The Savoy (first time ever!) with him and the Chairman of NRDC. Vincent explained the problem to his old friend, and very soon a figure was agreed. We came away with our reputations enhanced .... and we kept some of the money. I think I was just there to listen and learn.

Methuselah   Peter Hall

We had a lovely elderly odd job man at West Gorton. Joe Lees, my Works Manager, told me that he was kept on because only he knew where all the drains were. His name, can you believe it, was Enoch. West Gorton, then, consisted of a group of what would today be considered very old and near derelict buildings. The site had belonged to Brookes and Doxey, a textile machinery manufacturer. Enoch had also belonged to Brookes and Doxey, which was why he was so valuable to us. He knew his way around, but not quite well enough.

One day Enoch was in the loft of a very ancient building. He hit his head hard on a beam and nearly knocked himself out. His mate grabbed him and sat him down on a plank - with a large exposed vertical nail.

Poor Enoch! But he wasn't in hospital long.

Into each life some rain must fall   **Peter Hall**

There was a tradition in Ferranti that on Christmas Eve work stopped at lunchtime, bottles were produced, and before long there were merry parties everywhere. Within an hour or two, most of them were quite out of hand. The two hundred or so wiring girls in 10 Bay - the West Gorton wiring shop, so called because of the design of the ancient building - saved up over the year, and bought copious supplies of all sorts of exotic liquor. This was smuggled into the works, past the blind eyes of the men on the gate. By late afternoon there was mayhem and some very drunk young girls. Men strayed into 10 Bay at their peril - unless they wanted to lose their pants.
At the end of one Christmas Eve Joe Lees and I were doing our usual search of the place to make sure there were no unconscious bodies lying about. We came across a very distraught young girl weeping over her friend who was flat out on the floor quite impervious to any attempts to wake her. Clearly this was a job for the Works Manager, so I asked Joe to lift her up and take her to the Entrance Lodge for collection by her parents.
Joe picked her up and, nursing her most carefully in his arms, started walking. As he did so she opened her eyes, gazed into his, said: 'I want to wee', and did! Poor Joe got very wet.
After some rather more serious incidents on later Christmas Eves I decided enough was enough. I overruled tradition and did a deal - no booze in the factory in return for the afternoon off.

A second Methuselah   **Peter Hall**

When Joe Lees came to retire I asked him where he was going to move to. Perhaps North Wales, I suggested. Joe had lived all his life in the grime and polluted air of Oldham (it's not like that now) and the idea of North Wales appalled him. 'There's no body in the air', he said.

Features of Pegasus

Proud quotes from Ferranti brochures of 1955

This computer is the first to embody the concept that the needs of the user should be placed foremost.
The difficulties of 'optimum programming' do not arise.
Pegasus Library Service: A fee of twenty guineas is charged for membership. This covers enrolment and one initial collected set of all Library Specifications issued up to the date of joining and all additional Specifications issued during the ensuing calendar year.

Who needs a winged horse?   **Peter Hall**

Perseus development, and so production, was running very late. Our customer in Capetown, the Old Mutual Insurance Co (SAMLAS), began to get very agitated, and at length their Chairman wrote to our Chairman - Sir Vincent de Ferranti - that perhaps it was all a con. Perhaps we didn't have a Perseus. Perhaps we didn't even have a factory. Sir Vincent was not best pleased with me and suggested I get out to Capetown asap with a good story and some photographs. Hence my first trip to South Africa.
They got their machine in the end. And in due course SAMLAS became very good friends and customers, eventually joining the board of ICL South Africa.

Nash-dashing   **Peter Hall**

We only sold two Perseus systems, both with Samastronic printers purchased from ICT. Perseus was very late, but not as late as the printers. Karl Erik Schang of Trygg Fylgia in Sweden was getting very cross: he had a fully working computer which was useless without a printer, and I couldn't give him any idea on when he would get one. He demanded my presence in Sweden. ICT knew all about the problem and I told them that unless someone in authority came with me the consequences would be grave. So it was that Freddy Nash, a Director of that company, came with me. I had not previously encountered him, so we met at the airport. He gave me a fairly weak story on the plane, so I left him to sell the situation to the customer. I must say he was very good at the job - I think he must have had some experience at it.

When he explained that it would take some time for the printer to be packed, loaded on a boat, unloaded, and all the rest of it, Karl Erik suggested that it be flown over to save time. Freddy said: 'Oh no, that would be much too risky. The aircraft might crash and the printer end up at the bottom of the North Sea.' This is where my inexperience, and my tendency to speak without thinking, let me down. I said: 'And that would be the right and proper place for your printer, Mr Nash.'

Needless to say we kept the order, and Trygg Fylgia - and particularly Karl Erik Schang - became very good friends and customers. Something to do with shared misery, I expect.

Later on they went through a similar trauma when they ordered an Orion, which was also very late. When they came eventually to replace their Orion, Karl Erik was very apologetic and said that they were ordering a 360 from IBM. However, a year later he came back to us wanting to replace his 360 with a 1900. Apparently the 360 was a great disappointment after Orion .... so how did the 1900 compare?

Freddy Nash saw the funny side of it, and we remained good friends until his retirement, about the time of the Ferranti takeover.

Creamlining   **Peter Hall**

We were always trying to find ways of minimising wildcat strikes. Things were getting worse and worse, so we advertised for an experienced labour relations man as an assistant to our Personnel Manager. We had lots of good applicants, but to our great surprise one was from our shop convenor - the man who was the principal cause of all the trouble. This man, I said, I would interview myself. He had a very good line, which I think was genuine. He said he was very ambitious, and had determined to rise high in the ranks of the union - the AEU. Sadly, the only he could get on was to get noticed, and the only way to get noticed was to cause trouble. So he took every opportunity to stir things up. He was, he said, fed up with doing this because, he thought, on the whole we were doing a good job. If we would take him on and hold out the possibility of a career in Personnel, then he felt sure the problems in the factory would be very much reduced. So we did, and they were.

Fur exchange   **Peter Hall**

We had a shop steward with whom a few of us used to have a drink ocasionally in the local pub. It kept us abreast of what was really going on. I have forgotten his name; let's call him Bill. Bill had given his girl friend Mary a rather splendid artificial fur coat. Sadly for Bill, we posted Mary to Bracknell. One evening in the pub Bill told us the sad story. Apparently he became suspicious about Mary's behaviour down south, so he went down unannounced, and waited in his car for Mary to come out of the factory. This she did with a man, and what's more she was wearing the

fur coat. He followed and watched as Mary and her man parked and went into a wood. Bill waited for a bit and then followed. There they were in action! Mary was lying on the fur coat so, waiting until near the crucial moment, he tapped the man on the shoulder and said: 'That is my f***ing fur coat!'

A lot of bottle **Peter Hall**

Sir Vincent de Ferranti retired in 1957, when he handed over to his elder son Sebastian. Sebastian was a very young man, only about 30, and not well versed, shall we say, in our sort of problems. For the biggest example, Atlas was being a financial headache. We had done a deal with Manchester University, but in addition we needed some real orders. The best prospect was the Atomic Energy Authority at Harwell, who were prepared to set up the Atlas Laboratory to serve the whole British research community. All was set, but we still had to negotiate the contract - and in particular the price. We wanted, if we could get it, a price which would cover all our costs including development. Sebastian, one of his right hand men and I went to London to do our best. At the last moment Sebastian chickened out, and said that he would pace the street outside and wait for us. We negotiated a very satisfactory price - £3.5 million - significantly above our minimum, but asked the other side if we might retire to another room to consider the tough deal they were asking us to accept. In fact, we found a room where we could wave to Sebastian below and give him the thumbs-up sign. After we had signed, the three of us found the nearest hostelry where we quickly downed a bottle - well-deserved, I thought - of champagne.

Bottles for Ianto **Frank Taylor**

Ianto Warburton, one of the key scientific machine designers in Ferranti and later in ICT, used to work best when he was partially - but not completely - drunk. For many years he was seconded to the University of Manchester at its Dover Street Electrical Engineering Building and was a regular customer of the College Arms on the corner of Oxford Road and Brunswick Street. Most of the time the contribution of a liquid diet to his work was very positive
But not always. There was an occasion in the early 60s when he exceeded the moderate lunchtime drinking level which normally facilitated his work and, as a consequence, decided to go and sit outside in his car to sober up. It was a Bond Minicar. Unfortunately a police officer saw him getting into the car, came up to the window, asked him for various personal details and for the registration number of the car, which for some reason he was unable to give, and he was done for being incapable while in charge of a car on a public road.

Ianto Bottles **Frank Taylor**

The CV 2179 valves used in the Mercury computer, and which always ran very hot, were known to all Ferranti engineers simply as 'Ianto bottles'.

Prohibited entry **Peter Hall**

One day Ianto turned up at West Gorton in his sweater (the one with the hole in it) and his slippers. Security wouldn't let him in. It took a lot of persuasion to get permission for him to ring to get either Keith Lonsdale or myself to come down and vouch for him and to certify that he could be allowed in. It might have actually been easier if he'd turned up more conventionally dressed. But then he was probably thinking about something.

Well, there has to be a first time.   **The man himself**

It was not the usual sort of demand for an engraved plaque, but it was handled with typical aplomb, and in due course the presentation plate was delivered, with an inscription giving place and date and saying: 'On this day Ianto Warburton drank a pint of water'.
It was probably Arthur Jackson who substituted a glass of water coloured with a few drops of something like gravy browning for Ianto's pint, but as Ianto said: 'The darts match was going on at the time, and that was much more interesting and important, and anyway after about fifteen pints in that pub who could tell the difference?' He still has the plaque, though.

Window dressing   **Peter Hall**

When we came to build what we called the Tower Block at West Gorton I was determined to avoid at least one of my friend Echo Organ's mistakes. He had a very smart development establishment at Stevenage, but from the outside it always looked a mess. Glass walls are fine if the occupants keep things tidy inside. Development people never do. Hence the Tower Block has what I regard as rather sensible windows. Anyway, there seemed no reason to think that anyone would want to sit at his desk gazing out at the view; we did not live in the most beautiful part of Manchester.

Computer Applications

In January 1957 Ferranti produced a book summarising the characteristics of Mark 1*, Pegasus and Mercury, and giving a brief description of some of their significant applications. It makes impressive reading to see what challenging topics were being explored even at that early stage, and it is noticeably very different from any list of BTM and Powers-Samas applications. The list reads:

    The unsteady accretion problem - (astronomy)
    Weather forecasting
    Survey traverse reduction - (mapping)
    Aerial navigation problems
    Research work in optical design
    Cotton spinning
    Applications of digital computers in physical chemistry
    X-ray crystallography
    Trajectory calculations
    Stress analysis of structures
    Electrical load flow problem
    Torsional vibrations - (rotating machinery)
    Critical whirling speed of rotors
    Fourier transform
    Multivariate regression analysis
    Minimising waste in cutting sheet material
    Production planning analysis
    Wages calculation with group bonuses
    Computation of index numbers
    Ordinary life assurance
    Computer fault diagnosis - (this actually referred to automated debugging!)

Inscrutability **Peter Hall**

At the same time as we in Ferranti, in collaboration with Manchester University, were designing Atlas, IBM was working on Stretch and Univac on Lark. All three were to be state-of-the-art very fast machines. In those days there was still a fairly free exchange of information. We had a visit from the Univac team, one of whom was Chinese. It so happened that one of our top men was also Chinese. I will never forget the strange circumstance of the two Chinese, in my office, discussing the detailed problems of achieving the best design - all in Mandarin.

How to delay a Takeover **Peter Hall**

Towards the end of the 1950s it became obvious that a private family firm would not be able, without raising money from non-family sources, to sustain a profitable position in the fast-growing computer business. Raising money that way was not then an option. After a lot of internal wrangling, and a few meetings with Arthur Humphreys, I managed to persuade my young boss, Sebastian de Ferranti, to meet the Directors of ICT. Arthur had fully briefed his side, but the only opportunity I had to brief Sebastian was on the plane going down to London.
I told him that ICT and Ferranti would be an excellent fit, because they had a large customer base and knew how to sell, whereas we could only really sell in the small scientific market. On the other hand ICT's products were pretty poor and less technically advanced than ours. This fit made me favour a takeover by ICT rather than a merger or takeover with one of the other 'engineering' companies similar to us, such as EMI, AEI, or GEC.
So it was that in 1959 Sebastian and I sat round a table with the Chairman, Managing Director, and one or two other Directors of ICT. After a few polite words the Chairman broached the subject of some sort of deal between us. Sebastian immediately jumped in and said something like: 'That's all very well, but the trouble is that your equipment is technically f***ing awful. Peter, tell them why.'
It was 1963 before the negotiations finally bore fruit, and the Ferranti Computer Department became part of ICT.

Features of Atlas

Extracts from a Ferranti brochure of November 1960, confirming - if confirmation was necessary - what an astonishing number of features that we still think of as modern were embodied in this aptly-named giant.

Atlas has a hierarchy of stores of exceptional size at each level of access time. In order to enable it to use its speed and capacity to maximum effect, the system is designed to allow simultaneous operation of several programs, each with its own set of peripherals. However, the user can write his program as if it were for a single-level store machine, and as if he were the only user of this machine.
The effective unification of the store from the user's point of view has been achieved by introducing an entirely new method handling the transfers of information betwen different levels of storage, by system routines assisted by special hardware. This also provides complete protection against mutual interference of programs sharing the machine.
Atlas is provided with a relatively smple basic command code of the single address type which provides for all the elementary operations, in both fixed and floating point form. In addition to these the programmer may also use a number of additional commands of a more sophisticated type called 'extracodes'.

The extremely high speed of the computer (which is of the order of a million commands executed per second) is achieved by fast access to storage combined with extensive parallel operation. For example, at any one time as many as three different commands may be in different stages of execution. This is made possible by providing several access systems to different parts of the store, and also by the parallel operation of the floating point accumulator and the index registers. The list of standard peripheral units has two columns of numbers alongside the descriptions. The first shows the peripheral equipment attached to the first Atlas to be installed. The second gives the numbers for which standard provision is made. The point is made that additional equipment could be attached, but that this would require additional hardware.

Input

ICT card reader (600 cards per minute)	1	4
TR5 paper tape reader (300 characters per second)	4	12
TR7 paper tape reader (1000 characters per second)	-	4

Output

Teletype punch (60 characters per second)	4	12
ICT card punch (100 cards per minute)	1	2
ICT printer (600 lines per minute)	1	2
Teleprinter (10 characters per second)	2	16
Creed high speed punch (300 characters per second)	-	4
Xeronic printer (3000 lines per minute)	-	2

Operators' input/output

Flexowriters (10 characters per second)	4	16

Magnetic Tape

Ampex TM2 units (90,000 characters per second)	8	32

Indeed, the only sentence in this remarkable brochure which raised a leetle bit of doubt in my mind was:

A general purpose compiler will enable programs to be fed to Atlas in any of the common source languages, including Fortran, Algol, and Mercury Autocode.

A word to the wise   **Peter Hall**

At West Gorton we were always keen to establish good relations with local people, especially local people of influence. Thus it was that I invited the boss of a local monastery to visit us. (He called himself 'the vicar'.) His order prohibited him owning anything, but that did not prevent him turning up in a very smart suit and wearing what looked like a very expensive watch. He explained that this was all the property of the order, and just on loan to him. He was a very engaging fellow. He enjoyed a few drinks, before a very good lunch with rather nice wine. After lunch I asked him if he would like to be shown round the factory. He seemed excited by the idea so one of my guys took him round. They had a grand tour which lasted most of the afternoon, finishing in my office. He had obviously enjoyed what for him had been a unique experience. He was full of it. He was so pleased, he said, to meet so many of his parishioners in their working environment. Then he said a strange thing: 'Do you have much pilfering in the factory, Mr Hall?' 'No', I said, 'We never have anything like that.' Then came his punch line: 'I take a lot of confessions, you know, Mr Hall.'

Next to godliness   **Peter Hall**

Keeping up good relations with the local community, and to balance things up, we had the local Church of England vicar to lunch one day. He staggered us all by proclaiming that the vicarage

was the only house in the parish with a bathroom.

Belting Orion   **Peter Hall**

Orion was a very difficult project. We were using 'ballot box logic' using magnetic ring cores driven by transistors. Progress was slow. I chaired a progress meeting about every two weeks. It seemed that progress only occurred in the two or three days before each meeting. I began to be concerned, to say the least. Frustrated, and speaking before thinking, I said that since progress only seemed to happen in the period immediately before a meeting perhaps it would help if we had a meeting every day, and I meant every day - ie including Saturdays and Sundays. What is more, so as not to eat into the normal working day we would start at 8 am. So there I was - committed. We carried on like that for some months, although we did delete Saturdays and Sundays after a bit. But the ploy worked.

Why didn't we roll him for it?   **Peter Hall**

We had ordered a printer from ICT. When it arrived it had no covers. I rang up my friend Arthur Humphreys to complain. 'Oh, you wanted covers as well, did you?', he said, 'That'll cost you £xxxx, and by the way the price has gone up for the printer.'

We did roll him for it   **Peter Hall**

The one group of Ferranti computer operations which was immediately transferred to the new bosses was, quite rightly, Sales. They were the first, therefore, to have to learn new ways and a whole new culture. Soon after the takeover I had a phone call from a young ex-Ferranti sales manager who had just got back from a trip to Canada with some of his new colleagues. He was, he said, in terrible trouble with his expenses, and asked what he should do. I told him he was grown up now and he would have to bear the consequences himself; there was no way that I could help him. Anyway, I asked, how much was he down the drain? 'Oh no!', he said, 'That's not the problem'. He found he had come home with more money than he had started with. He had been introduced to liar dice, an established part of ICT cultural life, and had done rather well out of it.
That young man subsequently became Managing Director of ICL.

Nil nisi bonum   **Peter Hall**

As part of the deal between Ferranti and ICT, Ferranti acquired some ICT shares and the right to nominate a member of the ICT Board. Sebastian de Ferranti had a younger brother, Basil, who was duly nominated. He was only about 30 years old but had significant management experience by virtue of some years running the Domestic Appliance Department. He knew nothing about computers or the computer business.
Soon after the takeover we had a visit from our new Chairman, Sir Edward Playfair. Naturally we tried to put on a good show. I was anxious for Sir Edward to meet the senior management because I believed that he would be impressed by their knowledge, skills, and intellectual abilities. In fact Sir Edward gave us a good going over. So much so that one of my more outspoken, arrogant and short-tempered staff (he was in fact an Oxford mathematician and rugger player) said to Sir Edward: 'Well, if that's what you think of us why the hell did you pay all that money for us?' To which Sir Edward replied smartly: 'Well, we got Basil!'
Needless to say, Sir Edward did not leave a warm glow behind.

Indoctrination   **Peter Hall**

A week or so after the takeover by ICT I was invited to London to meet people for an evening in a relaxed atmosphere. A car would meet me at the airport and take me to the Little Ships Club. It was quite a swish motorcar but unfortunately, as we were passing Buckingham Palace, there was a tremendous thumping from beneath my seat and we cruised to a standstill. The propeller shaft had become disconnected from the rear axle and was thrashing around underneath, threatening to break through the underside of the car and do me no good at all.
You can imagine what I thought of this welcome into ICT. But it turned out that this get-together was my introduction to Cedric Dickens' famous cultural tour - ie a pub crawl down the river to Greenwich and back. A great time was had by all, and at the end I really felt that I was part of the ICT family.

Image-ination   **Peter Hall**

Some time after we became ICT I began to be concerned about our rather scruffy image. One easy thing we could do was to replace the elderly gentleman on the front door by a glamorous young lady. We had plenty of pretty girls in the wiring shop. Why not promote one of these? We had, I thought, a stroke of luck in that among them there was a very glamorous, very presentable and very pretty Indian girl who had, we noticed, some very fetching saris. So we fixed it up. All hell broke loose among the wiring shop girls. This was discrimination. Our bit of glamour on the front door had been chosen for her looks and not on the basis of merit. I'm sure there was a bit of unexpressed racial prejudice around as well. There certainly was on my part.
We had to climb down and have a proper internal advertisement, interview, etc. To my shame I hadn't got the nerve to insist that my original choice should be the successful applicant.

Interrogation   **Peter Hall**

With the increasing output from West Gorton I became very concerned about our production control systems. Too much seemed to go wrong, too often, and for avoidable reasons. So I got a well-known firm of consultants in to advise us on what was wrong and what we should do about it. I made a habit of asking to meet the impressive young man who had been put on the job for an occasional chat, usually at about 6 pm. One day he said he could not make it. This was not good enough, so I insisted on his telling me why. He was very reluctant, but in the end I got it out of him: he was attending a course on Production Control at the local Polytechnic. 'That is interesting', I said, 'Who is the lecturer?' Again he was very reluctant to tell me, but eventually he gave in. It turned out that the lecturer was none other than our own head of Production Control at West Gorton!

Ecclesiastes xi 1   **Peter Hall**

I was on a trip to India with an EEC delegation. We were about forty strong, among whom there was one other Englishman, plus a journalist. After a visit somewhere - it doesn't matter where - I was invited by a very swish and obviously upper class Indian to have dinner at his home one evening. I was delighted to accept. It was very luxurious and elegant. We were a party of about eight, I think, and I was certainly the only non-Indian. The conversation was sophisticated, and the women were beautiful. After dinner my host asked to have a private conversation with me. We retired to what I suppose was his study. After some polite general chat he said that he asked to speak with me because he thought I should know that our Managing Director in India was a

crook.

On the same trip I took the opportunity to go and see the top man in government responsible for approving technical imports, eg computers. It turned out that he was one of our Manchester University / Ferranti Atlas team. Now he was an Indian civil servant with the rank of Permanent Secretary.

Utterly unsubstantiated

It is said that Ferranti had a policy that all partitions between offices could be opaque at ground level but had to be of glass above the level of the average desk. It is further said that this went back to the days of a certain evening shift manager at Newman Street, in the days of solid partitions, who took advantage of his office to take advantage - one at a time, course - of four ladies on his staff. The arrangement was apparently satisfactory to all concerned, and continued for some time, until part of his ardour cooled, and one of the four decided that she wasn't getting her share, whereupon she blew the whistle.

Chapter 5 - English Electric, LEO, Elliott and EMI

Timeliness   **Jon Michell**

English Electric undertook to help with the attempt by the "Sir Thomas Lipton" to win the Trans-Atlantic race. This required the company to receive data from the Met Office, use a computer to calculate the best direction to steer, and then beam the instructions to the yacht. It went well, and the company duly blew its own trumpet to its usual modest extent. One customer reaction was a telex : "Congratulations on getting across the Atlantic in record time. How about getting my payroll down the M4 to Maidenhead on time next week ?"

Timeliness - the essence of the contract   **Brian Russell**

Sometime in the late 60s, the Department of Mathematics at Leeds University ordered a KDF-9 from what was then GEC, Kidsgrove. The university was quoted a delivery date of some twelve months, and then heard nothing more. As the months went by, the new building that was to house the computer slipped more and more behind schedule. No-one worried as nothing had been heard from the supplier. On the very day before the agreed delivery date, the phone rang at the university : "You have a machine due for delivery tomorrow. What address should go on the driver's delivery note ?"

The machine did arrive the next day. It was put in storage for three months before it could be installed and switched on.

A Missing Two from Deuce   **Ian Slater**

A long time ago there was a computer called Deuce. At least in the 1950s it was called a computer, but it would be outclassed by a factor of about a million by the PC that I am using to word-process this story. Deuce had very respectable antecedents, for it was the commercial derivative of Ace at the National Physical Laboratory, and so had connections back to people like Alan Turing, activities such as the codebreaking at Bletchley Park during the 1939-45 war, and the mathematical basis of the theories of computation.

The physical presence of Deuce was remarkable even by the standards of its time. It looked as if it had escaped from a 1930s film, with a large console at the front covered with small switches, circular display tubes showing rows of dots, and a telephone dial. The dial was not part of an early dial-up networking system, but rather a program-testing aid. The idea was that one would sit at the console and run a program under test to a particular point where a stop had been set. Then one dialled a number between one and nine, and that number of instructions would be executed at the speed of the dial. So one scanned the dots on the displays, which represented bits of course, and hoped to track the action of the program and understand where it was going wrong.

The programming language was at the hardware level. The whole process of creating a program in binary written backwards, punching it (still in binary) onto cards and then testing it at the console was rudimentary in the extreme. With hindsight it was a major achievement that useful results were ever produced from Deuce.

I had the following story from Mike Whalley about thirty years ago and have never forgotten it. Rather strangely Mike did not remember it some twenty years ago but I am sure that it is true!

Deuce input and output were dependent on punched cards and printed reports were obtained by taking the cards to a tabulator in the next room. The tabulator usually worked, but it was a large and very mechanical device so faults were frequent. On one occasion Mike had a call from a bureau customer to say that his output was incorrect. According to the customer one of the numbers in the first column of a table had lost its leading digit (a two). Knowing that it was highly unlikely that a program error would affect just this one number Mike asked the customer to return the output so that he could examine it. He immediately realised that the problem had a very simple cause. There was no fault with the program and the cards that had been punched by it were correct. Unfortunately, when the cards had been printed on the tabulator the paper had been too close to the left hand limit. When the missing digit had been printed it had been popped out on a sprocket hole, a small paper disc that was collected in a container underneath the machine.

When Mike explained this to the customer he was not convinced. He had paid for Mike to write the program and needed to be assured that he had not been sold a program with a bug.

There was only one way to settle the matter and the missing two had to be found. It was there somewhere, in a large pile of small paper circles, all blank except the one that, by having a two printed on it, would show that Mike's program was not at fault. Mike was persistent and wanted to keep the confidence of the customer. So he spent two hours going through the confetti and eventually found the missing two on its small paper circle. The customer accepted the evidence and all was well again.

Y2K   **1950s**   **Philip Virgo**

Richard Sarson asked David Caminer whether LEO software ought to be made able to cope with dates in the next century. David thought for only a moment before replying : "Oh sod it, there won't be any LEOs still around by then".

Unsubstantiated   **Rumour**

The initial LEO machines were constructed in a building which had originally been a depot for horse-drawn buses or trams. There had been space, therefore, on the ground floor for the vehicles, and the horses were accommodated on the first floor. But since horses don't take kindly to stairs, and this was long before the invention of lifts, the main access to the first floor was by means of a ramp, which started half-way along one of the long sides of the building, rose to a corner, and was completed by a shorter ramp across the end.

Now I really can't remember who told me this, and *nobody* I know from LEO seems prepared to verify it, but the story goes that some unit which had been constructed on the first floor had to be brought down to the ground floor to be married to other units for testing. It was in the evening when the proud builders started. The hefty unit was manhandled onto a trolley, which was carefully eased down the first, shorter, bit of the ramp to the corner. Now whether there was bad luck, or overconfidence, or a bit of both we will never know, but it is told that as the precious machine was being manoeuvred round the corner it took charge, broke loose, and ran away down the ramp, pursued by a bevy of young white-coated engineers, certain that in a moment they were about to see the simultaneous destruction of their handiwork and ruin of their careers. But mercifully it didn't overturn, and on the flat they caught up with it before it could collide with the far wall.

LEO bits   **Bob Peel**

In the early 60's I remember travelling on the Midland Blue Pullman from Paddington to Birmingham to visit the LEO installation at Fort Dunlop. I was carrying three magnetic tapes with me in plastic containers. On the Pullman there was an integrated driver's cab and as I was lifting the tapes down from the luggage rack the driver or fireman came through from the cab. On seeing the tapes he inquired whether they were for that night's film at a cinema in Birmingham and was it worth going to see. I decided that the concept of computer tapes might be a little hard to explain, agreed with his surmise - and told him not to miss it !

LEO and an audience   **Bob Peel**

One of the early LEO systems, III/5 I think, was installed at CAV in West Acton on a street corner complete with plate glass windows on two sides. The system cabinets were tastefully arranged round the other two sides of the room and to avoid spoiling the look of the room a dummy cabinet door had been built in to allow access to off-line control etc. On the diagonally opposite corner of the street was a pub and after closing on a Friday night when the operators judged a sufficiently inebriated crowd had their noses pressed against the glass, an engineer was summoned who sprang through the dummy door waving a large spanner!

The lying swine   **Bob Peel**

My fiancee and I were planning to get married in October 1964 when I was offered a three year contract in Australia. I accepted but explained that I had one or two constraints that would stop me being there until October. I fondly remember the telegram from Peter Gyngell, the then MD - "Australia lovely for honeymoon in August - can you come then?". I declined the offer and stuck out for October. The next year I discovered that he had lied in his teeth. Melbourne in August was NOT lovely!

I didn't think she was *that* kind of girl   **Bob Peel**

On arrival in Australia I was subcontracted with other ex-pats as a programmer to the Shell Company who had initially one but later two LEO III's. I was somewhat taken aback one day when a very voluptuous young lady with magnificent decolletage leant across my desk from the front and said "Bob, can I borrow your Durex please?". I am told my face was a picture. One of the other Leo staff took pity on me and said "It's all right she only want's to borrow your eraser". I know it is normally said that the UK and the USA are "two peoples divided by a common language". I hadn't realised that it applied to the Antipodes as well.

Memories of Hartree House   **Bob Peel**

(For those who don't know, Hartree House was LEO's head office in Bayswater and occupied the second and third floors above William Whiteley's department store in Queensway.   It was a weird building in some respects, with steel bomb-proof blast doors in the most unlikely places.)

When I went for an interview in October 1961 we were shown around the programming offices. We were being hired as LEO III programmers and the existing programmers were LEO II trained. The offices resembled a school room with the chief programmer, a formidable lady, sat at the front of the office faced by serried rows of desks. But what made it unusual was the complete

segregation of the sexes. Memory has it that there was actually a rope dividing the two halves of the office; but there couldn't have been, could there?

Memories of Hartree House - 2   **Bob Peel**

I joined LEO on 1st January 1962 and promptly went on a four week programming course, followed back-to-back by a two week advanced course. Six weeks later, such was the shortage of trained staff, I was actually *giving* the advanced course.

Memories of Hartree House - 3   **Bob Peel**

Being fairly cocky at this elevation to the heady status of trainer I found I could lecture without notes - just talk to the hand outs. My downfall came when, not long after, a party of Russians visited and I was called upon to talk to them about the LEO Master Programme (in those days it was still a 'Programme' - not the Americanised version of the word). The party was hosted by Dan Broido, a Russian emigre, and I rapidly had my come-uppance because, as anyone who has had to take part in a conference where you don't have the benefit of simultaneous translation knows, you have to pause after every sentence to allow for translation. This badly interrupted my flow and I was forced to stumble to the end. Thereafter I always made sure I had notes.

Memories of Hartree House - 4   **Bob Peel**

The offices on Queensway overlooked some flats above shops on the opposite side of the road. If one was working late, about 22:30 or so, you would notice that all the operators and engineers and anybody else around gravitated to a particular front office. The entertainment was a young lady in a flat opposite who was undressing in a very slow and deliberate manner. She had to be aware of her audience and I am assured it was a regular performance.

Memories of Hartree House - 5   **Bob Peel**

The LEO III used an electric blanket to keep its core memory at operating temperature. This resulted in a cube with dimensions of about 9" sides. One evening on entering the machine room I noticed an enticing smell of fish and chips. On investigating I discovered that the shift leader was keeping his supper warm on top of the core blanket until he returned from the pub.

Memories of Hartree House - 6   **Bob Peel**

Like West Gorton we had problems with paper tape and electric winders, but being situated where we were, we didn't have the benefit of a nice warm internal staircase. Instead we had to make our way onto the roof of Whiteley's and drop the weighted end of the tape off the roof. This was OK in the summer but on a cold winter's night was not pleasant!

Memories of Hartree House - 7   **Bob Peel**

LEO III originally only used paper tape as its raw input device but we soon had an Elliot card reader. This worked by dropping the cards vertically down, pushing them longitudinally through the read head and letting them drop into the stacker. To avoid problems with cards floating into the stacker and getting shuffled, there was a device to remove static just after the read head. This "device" was actually a length of tinsel that was glued across the exit into the stacker. Although

this worked well enough it wore out fairly quickly. The engineer was despatched to the shops in Queensway to buy fresh supplies and duly returned with the same which were stuck in place. This didn't seem to stop the cards floating into the stacker. After much investigation it was found that the design had been changed and the shop's tinsel was now made of plastic not metal. Ah well, back to the drawing board!

Memories of Hartree House - 8   Bob Peel

On my return to Hartree House after a three year tour in Australia, I met a colleague who looked a lot more than three years older, staggering down the corridor and muttering "there's too many virgins about". In view of his previous reputation I could only assume that he had accepted the resolution of this problem as a personal challenge.

The Test Match   Peter Byford

I think I ended up assisting David Caminer with the organisation of the match because I had just led the LEO team to victory for the Lyons Club Pennant. This competition involved fielding teams in about forty odd sports (soccer, tug-o-war, athletics, snooker, squash, cricket, swimming, hockey, darts, etc), one match at each sport against one other team, and it was the luck of the draw who you were against in each event.

Much had been said by English Electric about the prowess of their cricket team. They had players with Staffordshire League experience, who played with the great West Indian, Roy Gilchrist. They were clearly looking forward to putting LEO firmly in its place.

Our captain was Mike Mears, a good club cricketer. I organised most of the team, including six or seven West Indians from the Minerva Road factory. Much to my amazement they were all ready on time. In the past I had had to select more than we needed in the hope that approximately the right number would turn up. So we travelled up to Dunsford Lodge in Cheshire - very much English Electric home territory.

They batted first. We had a fast bowler, a slightly built West Indian named Winston Jackson. Small he might have been, but he was lethal, and the English Electric side was fairly quickly reduced to 14 for 7. It was one of those days when we could do no wrong. Even I, a rabbit in this company, managed to take a good catch on the boundary. It was unbelievable to Mike, who by this time was struggling to keep the game going. He had to take Winston off, and the home side scrambled to a score of some respectability.

Mike opened the batting for LEO, and was soon given out LBW. The umpire was glared at for his outrageous decision. In fact a photo was taken of the crucial moment, showing that Mike's leg was way, way down the wicket when it was hit. Mike was furious. The whole merger was nearly called off at that instant. From then on more than honour was at stake. We won comfortably in the end. The English Electric side were, to say the least, put out by their defeat and the manner of it.

Misunderstanding   V.A.Westerman

Late 1950s : Although Elliott Automation did not have an extensive customer base of 802s they were nevertheless fairly wide spread.

The service engineer for 800s, Ron Smith, was one day on call to the Fighter Command HQ site when he decided to use the site telephone to enquire about one of his other customers. In no time at all he was accosted by two burly RAF policemen who wanted to know what on earth he was doing ringing Moscow.

Misconstruction   V.A.Westerman

Late 1950s : The Elliott computer commissioning floor was single storey and abutted the office accommodation where further floors were being added. This necessitated providing a number of reinforced concrete columns adjacent to the commissioning floor, but screened from it by plastic sheeting.

The inevitable happened, and one day a steady stream of ready mixed concrete cascaded down through the sheeting from an insecurely shuttered column, and surged across the floor right up to the end of a 405. The foreman was brought down to see the mess and when asked by the commissioning floor manager : "What do you think this is ?" coolly replied : "Looks like a 1:3:4 mix to me", adding : "I thought it was taking more than usual".

Miss   V.A.Westerman

Late 1950s : On a potentially more serious occasion, during the same building work, a length of scaffolding pole hurtled through the roof and bounced off the commissioning engineer's chair. Fortunately it wasn't occupied at the time. Who says the devil doesn't look after his own ?

Miscalculation   V.A.Westerman

Late 1950s : When the prototype Elliott 503 was being commissioned, it was decided that, in order to make it more usable as a demonstration machine after its prototype commissioning was over, all the paintwork on the frame and door edges would be protected by masking tape. This was duly applied.

The time came to strip off this protection and refurbish the machine's appearance. Easier said than done. Consultation with our next door neighbours, Sellotape Ltd, made it apparent that it wasn't peelable masking tape that had been used but a permanent version which had set hard in the heat. It took considerable effort to remove.

Oh Calamity !   1950s

It was EMI, (wasn't it?), who dropped a computer on the quay while unloading it from the ship that had brought it all the way from the UK. But what a place to choose! Who would want to have to go twice to Murmansk?

Chapter 6 - ICT

3.45 p.m. 29th January 1959

The merger of The British Tabulating Machine Company Limited and Powers-Samas Accounting Machines Limited is an important event in British industry generally as well as in the field of business machinery in particular.

The combined Company is called International Computers and Tabulators Limited (I.C.T. for short), and will trade under this name. It is intended that the initials I.C.T. should be adopted for general use both in trading and financial connections. This is convenient and in line with modern practice. I.C.T. employs between 15,000 and 16,000 staff - and its assets are valued at nearly £24 millions.

Throughout the fifty years of its existence The British Tabulating Machine Company Limited had built up a remarkable business of renting Hollerith electro-mechanical punched card equipment and electronic computer machines suitable for all types of large and medium-scale Governmental, Local Authority and Business undertakings. Its operations were conducted almost entirely within the United Kingdom and Commonwealth countries.

Powers-Samas, in its forty-three years of life, had correspondingly built up a highly successful business with similar institutions and organisations by both renting and selling mechanical and electronic punched card equipment suitable, not only for large and medium-scale undertakings, but also in the field of smaller businesses not covered by the Hollerith range. Powers-Samas operations extended beyond the Commonwealth countries to the Continent and, on a small scale, to North America.

The merger of these two undertakings results, therefore, in the covering of a wider market with more varied equipment by the joint Company than was covered by either Company separately, and will enable I.C.T. to supply either electro-mechanical, mechanical or electronic punched card and computing equipment; each of these systems and combinations of them having particular virtues in providing solutions to particular problems.

The demand for this full range of what is commonly known as data processing equipment increases in step with the expansion of State activity and industrial output arising from the remarkable advances which are taking place all over the world in scientific and technical development. World scientific trends, with which are associated so many social and government sponsored projects, need an ever-increasing supply of the products I.C.T. will produce and distribute. The Company attaches great importance to the steady development of both the Commonwealth and European markets, and in addition a close study is now taking place on the priorities to be given to development in other areas throughout the world.

Both Companies have invested heavily in research into and development of orthodox punched card equipment, holding in common the belief that the market for this equipment will remain highly active for many years to come. Research into high-speed printing has been undertaken by the two Companies and their respective areas of research have been complementary. In the field of electronic calculators and computers immense knowledge has been accumulated by the two Companies, each reinforced by association with other important undertakings specialising in electronic development. The merged Company has available, therefore, not only the sum of the

techniques and specialist knowledge of B.T.M. and Powers-Samas but that derived by B.T.M. from its association with The General Electric Company and with the Laboratory for Electronics in Boston, U.S.A., and by Powers-Samas from its association with Ferranti Limited.

Mergers in the air   Richard Dean

Following the Powers Samas / BTM merger, all services staff in the Birmingham area were concentrated in the ex-Powers office. Likewise all sales staff, including the comparatively elderly secretaries, were brought together in the ex-BTM office. One of the features of this office was an extremely large stationery cupboard. There were also three secretaries, two of them being rather senior and middle aged; oh all right, then - old trouts. The third wasn't. She was a sweetie. And Brian Alman noticeably spent quite a lot of time in the stationery cupboard when she was also in there. To the extent that the two old dears were driven to complain that it wasn't right, no it certainly wasn't, and would the manager please tell Mr Alman to stop 'it'. Now perhaps managers had thinner skins in those days, but it was obvious that giving a subordinate a rocket on the subject of sexual mores was not a comfortable task. In fact it was extremely embarrassing, and it was half way through another week before he had steeled himself to the unwanted duty. Finally, though, he managed to start suggesting to Brian that hanky panky in the stationery office with a member of the female staff was not conduct becoming to an employee and a gentleman. But he hadn't got very far before Brian interrupted him with : "Before you say something that you might regret, I think I should point out that you seem to be talking about Frank Hine's fiancée." This was a complete stopper. The rebuke ended abruptly, to be succeeded by the interesting sight of a manager's mouth opening and shutting with no sound coming out of it. What had happened was that at the weekend, when Brian was away, his flatmate had by agreement gone out with the girl, got more than a little drunk, and proposed to her. History doesn't record whether she accepted him, or who she eventually married, but then history doesn't have to, does it ?

Music hath charms   Richard Dean

It was another of those Friday afternoons. The week's work had been done, and we were - admittedly - in switch-off mode. I forget who had had the idea, and whose equipment it was, but the fact remained that the ICT Birmingham technical support office found itself occupied chiefly by some unoccupied young technical advisers and a record-player and a stack of associated records, which were obviously in transit from one evening's party to another, and had been left in the office. Record-players weren't as simple in those days as they are now, so it seemed a highly appropriate challenge to connect all the kit together and get it working, and then it was apparent that there were all these records, and wouldn't it be a good thing to check it we'd got the sound set up just right, and ..... Now Brian Alman, (and now I come to think of it it might have been his equipment), was perhaps the least technical of the lot of us, and he had drawn the short straw to visit a site on which arcane problems had a habit of cropping up. True to form, they came up with a never-before no-no, and it quickly became apparent to Brian that he was faced with a problem that was outwith his competence. So naturally he rang the office, to bounce the problem off some of his more technically assured colleagues. Except that every time he tried to do so the start of his technical query was blotted out by a blast of Joe Loss, or a rumble of Edmundo Ros, or a constellation of Louis Armstrong's All-Stars. And none of his colleagues could be persuaded to turn the volume down so that they could pay attention to his problem. And the customer could not believe that he was ringing the right number, because surely ICT people would not behave in such an un-businesslike manner. It was very frustrating for the poor chap.

The Great Rosyth Payroll Disaster   **Chris Hipwell and Ross Rebbeck**

This became legendary in Government Region, and it all arose out of the really bitter commercial warfare that went on between British Tab and Powers Samas right up to the merger that formed ICT. The background was that Powers Samas seemed to have a worldwide stranglehold on dockyard accounts - "all the dockyards from Singapore west were Powers" was how it used to be explained. So it was a great coup for Donald Cook when he wrested Rosyth away from George Gardener of Powers. And in due course two 550s were installed to do the bulk of the work on the critical dockyard payroll. There were two fundamental flaws in the new arrangements : the two 550s simply did not have enough oomph for the job - "they would have needed more than a week to do it"; and nobody thought to do any parallel running. There may have been a bit of deliberate under-selling behind the first point, but the second simply shows how in those days we could behave with what would nowadays be considered a grossly unprofessional attitude. No parallel running ! In such a major change over ! It simply beggars belief. Inevitably, Friday arrived, and with it chaos. The office building was under siege from an early stage. It even made the main BBC news on the next day : "Yesterday five thousand dockers queued all day in the rain for their pay - and didn't get it. The reason was a breakdown of two new computers". Not the sort of publicity that a new company wants to get, because in the meantime the infant ICT had been born out of its squabbling predecessors. So it was all hands to the pumps until the problems were sorted out. In retrospect one can say that both the Admiralty and the Company grossly mismanaged the whole affair. And, forty years later, it still seems jolly unfair that account responsibility, including the clearing up of the mess, was given by the new Company to George Gardener.

Did she fall, or was she pushed ?   **Brian Cook**

The Birmingham customer was known to be old-fashioned and strict of morals. The trainee was inexperienced, innocent, female (of course) and certainly not more than 17. And the training course was at Moor Hall in Cookham. Could ICT guarantee her safety ? My manager gave a convincing account of the strict segregation in the accommodation at Moor Hall, with a rider about the well-known rigidity and ferocity of the matron employed to keep things under control. Very well, on that understanding let the training go ahead - Miss X was authorised to attend the course.

It was, of course, not until some time later that the balloon went up, and a peremptory summons came from the customer's manager - clearly a lot more in anger than in sorrow. The tableau could not have been bettered in any Victorian melodrama - the furious customer, the distraught parents, the abashed and drooping 17 year-old innocent (?). The only thing not positively visible was the actual pregnancy.

You wanted initiative, didn't you ?   **John Stevens**

In the early days of barrel line printers, one particular customer had a problem : every time he wanted to print spaces, the printer produced dollar signs. This proved to be a particularly difficult fault, and baffled even the third line engineers. Eventually one of the local engineers, not previously noted for his diagnostic skills, asked if he could have a look, and it was felt by those present that there would be nothing to lose by letting him have a go. They adjourned; you know where to. Two hours later they returned, and their colleague's credibility soared skyward when he handed back the printer with the problem totally cured.

Some months later, the same customer put in another call on the printer. This time, he really wanted to print dollar signs, but found that he was only getting spaces. Imagine the surprise of the investigating engineer when he found that all the dollars had been filed off the barrel.

Matters of finance   **Malcolm Stuart**

I joined the Stevenage organisation late in 1959 and enjoyed my first real pay packet after leaving the army - a handsome £11 per week. Despite this massive pay packet, my first motorbike was purchased on HP.

I prudently made it a habit, when making my monthly repayments, to round up the amount to the next whole pound over the due amount. Imagine my consternation, therefore, when I received a peremptory demand for non-payment of the HP.

I duly presented myself at the finance company's counter with my annotated payment book and was told not to worry as there had obviously been an error.

But the same demands were repeated over several months until my patience ran out and I demanded to see the office manager. I was ushered into the carpeted inner office where the explanation was offered that the errors were due to their new Hollerith machine, lately installed. When I replied that I was interested in that answer as I worked for the company I was immediately offered the alternative excuse - operator error.

Maybe an agreement priced at £2-17s-6d being confronted by a payment of £3 caused a mismatch which assumed no payment.

Perhaps men are more versatile than machines, for at about the same time I was full of admiration for the senior payroll officer to whom one went with pay queries. Arthur could leave one totally in awe by effortlessly adding up pages of £sd, all columns at once, while discussing my individual pay and tax problems!

10d or 11d ?   **Malcolm Stuart**

I saw the introduction of the 550/2 calculator, and was part of the team of development engineers responsible for the pre-production run of seven machines in the Stevenage factory.

At this exact time one of the prestige sites, Hackney Borough Council, were losing patience with us as it appeared that they could not get their financial programs to work correctly. Jack and I were sent from Letchworth to test a machine that was due to be used by the finance officer from Hackney in a last-ditch attempt to salvage the contract. It was impressed on us that we could not afford to fail : the machine absolutely had to work perfectly.

On the day of the trials, despite repeated re-runs of the programs, the sums just didn't quite add up. The contract was lost. The inquisition started. The cause was found.

In re-designing the machine from the 550 calculator, the position of the 10d and 11d holes on the plugboard had been inadvertently reversed. The masks sent to Hackney for them to plug up their test programs were the wrong ones. But it was another twelve years before decimalisation produced the final answer.

Roasted or what ?   **Malcolm Stuart**

In the days when GEC Coventry were building the 1301 computers I had to make weekly visits under the guise of Quality Control. The SPON works were a regular rabbit warren and, by today's standards, probably a high fire risk. The works dining room was on the roof.

On my first visit I was introduced to the fire escape mechanism to be used in the event of an emergency while on the roof level. The canvas belt went round one's waist, and one held onto the rope. This was connected to a device like a large fan. One was supposed to leap off the roof and one would, in principle, be lowered gently to the ground.

Was this perhaps why there were always plenty of seats for lunch ?

Printer Test or What ?   **Malcolm Stuart**

At the time of 1301 production at Stevenage the official test procedures had the authority of holy writ as far as the commissioning staff were concerned. However, alongside the book there flourished an interest in writing unofficial test programs, and Don was the master of that art.

Commissioning had to follow a set sequence, and eagle-eyed engineers prowled the floor to ensure that there were no deviations. So there were objections when examination of my machine log seemed to show that I was running a printer test at a time when the machine should have been devoted to drum testing.

Groupie was not impressed when I told him that the diagonal pattern of data being printed was held on the drum, and therefore any deviation from the perfect diagonal would should up the intermittent drum fault. To this day I don't know how they could have spotted it otherwise.

I wouldn't call him 'two-faced', but ...   **Malcolm Stuart**

Peter was a lovely fellow. Day after day he worked in the clean room at Stevenage, ready to answer the telephones from the testing floor, while tending his charges - the tape systems connected to the computers outside. He would ensure that tapes were always mounted as required, would advise when malfunctions appeared to be happening, and ensured that the maximum duty cycle could be maintained at all times.

But one day he was replaced by another fellow. This new boy, while not downright obstructive, didn't seem to care much about the job. He seemed to resent the interruptions of the telephones, and appeared to shut himself off from the outside world.

Over the weeks that followed the new boy gradually grew a full and dark beard. As his beard grew so did his attitude change. At last Peter was back as we remembered. I guess being persuaded to remove one's beard to please another can be quite a traumatic experience.

Chaste and fair   **c 1959**   **Hugh Smith**

ICT managed to sell a DIANA to Chase Manhattan. It must have been the association between the name and hunting, otherwise the chase, that did it. And then the customer changed his mind. Probably just as well, because it could have become very embarrassing if we had ever been

compelled to actually build the thing.

The story that became established in Sales was it would have been a valve machine, using thousands of them, and that ICT calculated that a) a valve would blow every fifteen minutes and b) that it would take about two hours to diagnose which one it was.

Keeping on message   **Peter White**

There was a big presentation session to the Great Western Region. We were trying to persuade them to adopt the ICT 1500 for the next stage of their development, and the various talks were all closely coordinated to give the same story about the machine's outstanding advantages. The really key claim concerned the 1500's modular functionality .... or was it its functional modularity? Try as we would, I don't think we managed to be unanimous on this. But maybe they had already decided that the business was going to Honeywell. Oh well.

Seymour Dearden   **Gavin Kirkpatrick**

I got to know Seymour well, not in his role as Southern Regional Manager of Home Sales Division, but hidden away as a kind of eminence grise to Lyon Lightstone, as UKSO Personnel Manager.

I was having an awful problem with a recalcitrant and headstrong Regional Manager who, to my tender little mind, was embarking on a dreadful course of action which would have extremely serious consequences for the proper conduct of company personnel policy. (Though note that we didn't have properly documented personnel policies in those days - we made them up as we saw fit.) In desperation, at around 10.30 am, I sought and obtained an audience with Seymour to discuss what to do.

"Ah, Gavin, my dear boy, come in, won't you ? Sit ye down. You look in a terrible state. I hope it was a good party last night ?"

"Seymour", I replied, "I didn't go to a party last night. I was here in the office, working till well past nine o'clock."

"Good Lord", said Seymour, "That's dreadful. You'll be setting us old chaps a bad example. You do seem to be awfully excited ! Whatever is the problem ?"

At which point I took a deep breath and started to explain my concerns. But before I'd got very far I was interrupted.

"My dear boy, you're getting all agitated for nothing. Let's have a little glass of sherry - or perhaps two glasses will be better, judging by the look of you."

Out came the bottle and a couple of glasses from the little cupboard by his desk. As he proceeded to pour two very generous measures of sweet sherry, he continued :

"The trouble is, Gavin, you don't know this Johnny very well. I do, and I told Lyon that it was a great mistake to appoint him to the job. You are worried by what he was threatening to do yesterday. You needn't worry your little head. By now, he will have forgotten all about it and

started already to dream up some other crazy scheme."

And then with the final coup de grace, Seymour concluded :

"And, Gavin, I'll let you into a little secret which only Lyon, myself and now you know. Tomorrow our Johnny is coming out of that job into a 'Special Duties' role, and he will bother you no more. You look better already. Let's have another sherry!"

Ruat coelum ... (let the sky fall)   Gavin Adams

The 1301 was going to be on display at Olympia. The night before the exhibition opened the installation testing was completed. Everything was working faultlessly. Baby was put to bed an we all went home. The following morning, at switch-on time, nothing worked at all - it was a complete wash-out. Quite literally so, as it soon transpired. The roof at Olympia might have been watertight when it was first put up, but not any longer, and the trickle from one leak had been aimed by cruel fate with the most deadly accuracy. When the covers came off, the innards of the 1301 were found to have their feet in positive puddles.

Not postcards but Post Office cards   Gavin Adams

At one stage the Hole in the Wall pub, opposite St Pauls, was the preferred site for the monthly progress meetings with the Post Office. That fact alone puts this story back towards the dawn of time. One agenda item concerned what to do with the 250 million superfluous cards of obsolete design that were cluttering up the Wembley Stores. It was established that the cards already belonged to the Post Office, but they had no interest in taking delivery. Eventually somebody sensibly asked : "What proportion do they represent of our annual expenditure ?" I forget the exact figure, but it was a tiny fraction of one percent. "Right, we'll write them off over another pint, and it's your round."

The end of the line   Gavin Adams

Clem Shread and Cedric Dickens had what could perhaps be best described as an ambiguous personal relationship; sometimes they seemed to collaborate like fun; at others each seemed to get most enjoyment from frustrating the other's objectives. Some time after the formation of ICT it became apparent that there was a problem with surplus Powers Samas kit, so Clem devised an incentive scheme to get it shifted. Double or even treble levels of bonus became available, and the salesmen naturally started selling for all they were worth (or soon hoped to be). Then one bright morning Cedric casually announced that he had sold the whole lot, as a single deal and at a very profitable rate, to the Railways of India. There was now so much commitment that the factory which had been scheduled for closure had to go back on overtime to catch up with the demand.

Things are not always what they seem   Malcolm Stuart

It was a typical busy day in 5/6 Works in Stevenage in the early 60s. Across the shop floor stood a variety of electronic beasts humming gently to themselves. Life was uncomplicated then: the transistor had yet to transform the world of computers, and valves still reigned supreme.

A series of complicated tasks was being performed by a select number of dedicated engineers.

One was half inside a machine cabinet, cautiously examining a great hunk of glass from which was coming a peculiar purple glow. Another was busy delicately probing a cable form in a silent machine, counting wires perhaps. And so on.

Adjacent to the gangway sat Peter, the most relaxed of the select few. In his hand was the latest paperback by his favourite author. Every few minutes another page turned, while he remained apparently oblivious of his surroundings.

Into this calm walked the alert and observant factory manager. Peter scarcely noticed him as he went past for the first time. On his second passage the manager was walking a little more slowly; he gazed at Peter and seemed about to speak, but then walked on without comment.

The machines went on humming. More pages were turned. And then the manager came by for the third time. This time, unable to contain himself any longer, he glared at Peter and demanded to know why he should be reading a book at such a time. Peter looked up, somewhat surprised by the interruption. "When the machine works, I don't" was his reply, and his eyes dropped back to his book. You see, the machine was being soak-tested, and only required Peter to work if it did not.

The manager walked on, beaten for the moment. But the following week came new working practices which required that one engineer should look after several machines on soak-test at the same time. That at least kept Peter on his feet, moving from machine to machine to check them. But by that time he'd finished the book, anyway.

It ain't half hot, Mum - and how Mum dealt with it   **Malcolm Stuart**

The factory at Stevenage was packed with equipment under test. Well over half the available floor space was filled with the monsters. And each monster was hot. Indeed, it was estimated that each of them could dissipate enough heat to keep the average house warm in the worst of winters.

Furthermore, there was no respite: because they were being commissioned, each of them was powered up for most of each working day. They were magnetic tape transport clusters, with two, four or six drives in each cluster. And it was high summer. For days on end the afternoon temperature was constantly above 80 degrees (this was in the days when temperatures were still measured in sensible units), and in an effort to get some relief we developed the custom of propping the fire doors open.

Sure enough, it wasn't long before management declared that this practice of opening fire doors had to stop as it was a security risk. "We don't mind what you take off to keep cool, but the fire doors must remain shut". Next day, Dave arrived for work in cut-off shorts and little else !

By the end of a torrid week, each fire door was enclosed in an exterior wire cage secured by glass bolts, so that the inner doors could be opened without any security risk.

Much later, the ventilator company installed massive hooded fan-assisted units throughout the work area. These had two operating modes: one to expel hot air from within the building, and the other draw in air from outside. The expel mode had almost no measurable effect. The intake mode had a dramatic effect in raising the temperature even further - because they collected the

hot air off the roof to pump into the building!

What an Opportunity !   **Frank Worsfold**

Early in the days of ICT, Personnel posted a notice advertising a vacancy for an "investigator - punched card type - suitable for a man with a round-hole background".

Thus vaunting ambition ....   **John Shute**

In August 1960 a group of us gathered in a conference room in ICT's Putney Bridge House. It was our first day with the company and we were awaiting instructions. On display was the latest and most powerful ICT computer, the 1301, or rather a cardboard cutout model of what was going to be built.

Left to themselves, the group of recruits contemplated their predicament in embarrassed silence until one wag pronounced : "I have a plan to get to the top of this company. You lot can all keep your heads down working for promotion, but I shall find the highest ranking member of the board with an eligible daughter and marry her. Daddy will reward me and I'll go straight to the top."

His contribution was acknowledged with a few chuckles, but the ice had been broken and the banter continued. The lady sitting next to him didn't bat an eyelid.

Later, of course, we discovered that she was the Managing Director's daughter. But it wasn't him that she married.

(The wag was Ron Phillips, she was Sally Mead, and she married Colin Southgate)

Finnish incidents - 1   **Adrian Turner**

KESCO was a large and important customer for the time, having no fewer than four ICT 1500s installed, all with the infamous Bryant Disc Files. Maintenance and support proceeded on their normal even course. What was unusual - for us, at least - was the regular use of the company sauna. Convention dictated that to avoid a roasted rear each person took in his own little plywood tray to sit on. When we emerged these were ranged against the wall and provided the highly unusual sight ("it may be rare in Berkeley Square ... ") of a perfect set of ICT bum-prints.

Finnish incidents - 2   **Adrian Turner**

Keith Lonsdale, the chief engineer of the time, (it must have been 1963, because it was shortly after the Ferranti merger), came to inspect our activities at KESCO. He also joined us in the sauna, and afterwards when we were taken for a magnificent meal in a restaurant at the top of a tall building. During this he pronounced magisterially : "Every self-respecting engineer always carries one of these", and produced a slide-rule from an inner pocket. To which I countered : "Nowadays, every self-respecting engineer always carries one of these", and brought out my screwdriver. Considering what the life of a field engineer was like, I'm sure I had the better of the argument at the time, and in which decade did you last see anybody using a slide-rule ?

Lucky Break   **1960/61**   **Alan Wray**

I was one of the lucky few to be sent to RCA, at Cherry Hill near Philadelphia in the USA. Our job was to learn and then support the RCA 301, soon to be marketed as the ICT 1500. The total contingent was twenty-eight. Some went for a few days, some for a week or so, and some for five weeks, but Peter Porter and I from Field Engineering HQ Support, Don Ryan and Clem Gallup, the first two site engineers, and Stan Glassborrow and Mike Jefferies from the Training School went for three months. The 301/1500 was a delight to work on and I was lucky to be there first. Fully transistorised, simple bus architecture, gold-plated connectors for the PCBs (as opposed to the horrible wrapped joints on the 1301), clever and elegant peripherals, good looks for its day, and an operator's panel that was so helpful for fault-finding. The downside to the trip was that it was over winter, including Christmas. The temperature fluctuated daily between 75 and 50 degrees F for two weeks and then dropped rapidly to 16 degrees (that's sixteen degrees below freezing). The upside was that it was all new, we were first on the ground, the Yanks were very friendly, we were given a $100 sweetener for Christmas, and with care and courtesy of Greyhound sufficient expenses to see a bit of Pennsylvania, New Jersey, New York, Niagara and Washington. Thank you, ICT.

Have a Nice Day   Peter Hall

Arthur Humphreys and I were staying in the same hotel in New York, way back in the 1960s. At breakfast the first morning Arthur said to the waiter : "I'd like a five minute boiled egg, please." "OK, Sir, but that'll take about twenty minutes." Next morning Arthur, being a consistent man, again said to the waiter : "I'd like a five minute boiled egg, please." "I'm sorry, Sir, the egg boiling machine is broken".

Some things never change   c. 1963-4 (but really timeless)   Philip Sugden

In the early sixties I was based in the Bristol office but had to make fairly regular trips up to London as I was part of the Public Utilities national sales team. On one occasion the meeting was scheduled for a little later than usual so I was able to travel up on the 8.15am from Bristol Temple Meads to Paddington instead of the 7.15am train that I usually caught. It turned out that the 8.15 was a Pullman service. It had both 1st and 2nd class accommodation but a supplement of 5s 6d (= 27p) had to be paid for 2nd class travel. I duly claimed this supplement along with all my other expenses on my next claim form. This was very quickly bounced back to me with a somewhat curt note to the effect that if I, as a rather junior employee, chose to travel in style on a Pullman train I could foot the bill myself. Knowing that the 'bouncer' was not a person who ever admitted to a mistake or misjudgment I decided that it was not worth arguing the case. I resubmitted the claim a couple of weeks later based on using the 7.15 train. As the journey started before 7.30 I was entitled to claim a breakfast supplement of 7s 6d (= 37p). This I did and needless to say it was approved without delay or comment. I believe that this syndrome has now been immortalised in The Dilbert Principle as 'Find the Umbrella', so obviously some things never change.

The Milk Round - 1   Gavin Kirkpatrick

'First Round' visits to universities in the company of Mick McCrea (Gentleman Farmer and ICT Personnel Director) were instructive as well as entertaining. At the end of each long day of 15-minute interviews, the recruitment team would meet with Mick to summarise and decide which candidates should be invited to a second interview in Putney.

As keen young professionals, anxious to impress the Personnel Director, we would compete with each other to distil the pros and cons of each candidate in the most succinct manner, to which Mick listened with laconic good humour. Until, that is, we came to one poor fellow, about whom we had great difficulty in finding anything positive to say. "I don't think we should expend much effort on that chappie", Mick opined. "Met him over lunch. Wouldn't have him on the farm."

Hurricane? There's no hurricane   **Gavin Kirkpatrick**

A young but very capable salesman (it might have been Trevor Brown) was having a lot of difficulty keeping a large and prestigious customer satisfied. In fact, matters reached such a heated state that the customer's Managing Director demanded that the salesman arrange for Arthur Humphreys to attend a meeting of the customer's Board to "sort things out once and for all".

To ensure that Arthur was briefed as fully as possible, the salesman worked his socks off assembling a complete history of the account and the background to all its difficulties, together with a complete set of proposals as to how these might be satisfactorily resolved.

The day duly arrived, and the company's Humber Super Snipe, with Howard in the chauffeur's seat, delivered Arthur and the apprehensive salesman to the front hall of this awkward customer. Hardly waiting for the introductions to be completed, the customer's aggrieved Managing Director let loose a tirade of abuse upon Arthur, upon ICT and upon all its works. The salesman hadn't predicted quite such an onslaught, and quaked in his boots.

Arthur listened patiently and, when the Managing Director finally paused for breath, said : "Thank you for letting me know your views. You have not added anything of substance to what has already been notified to me by my excellent colleague here. I'll be writing to you." At which point they excused themselves and left.

Terrified of what Arthur was going to say, and feeling his career collapsing in ruins about his feet, the salesman slunk back to his seat in the rear of the Humber and they were driven off.

Within a minute or two Arthur gently patted him on the knee and said : "Rum do that was. You have nothing to reproach yourself for. They can take their business somewhere else. Let's stop and have a drink."

Input to HAL   **Graham Morris**

In the early 1960s I found myself, as a bit of unexpected career diversification, fronting a short series of BBC television programmes on the capabilities of computers. It was as a direct result of this that one morning I had a phone call in my office at Putney. "Good morning, Mr Morris," said a voice; "My name's Clarke and I wonder if you would care to have dinner with me and talk about the future of computers". My reply must obviously have been rather wary, because he went on to say : "Perhaps I should have said that my name is Arthur C. Clarke", and then everything became clear. So Bill Talbot and I went out and spent a most enjoyable evening discussing what we thought computers would be capable of by the year 2001. I remember 'heuristics' came into it quite a lot, by which I think we meant that by that time computers should be capable of working some things out for themselves instead of everything having to be made totally explicit for them. The book had already been published, as I recall, and it was probably at a time when

Clarke was working on the screenplay for the Stanley Kubrick film. Anyway in view of the fact that most people think 'HAL' had a lot to do with IBM (the three letters of the name are each only one away from 'IBM'), it's nice to record that possibly ICT had a little to do with it as well.

A record (unless, of course, you know different)   ICT House Magazine, December 1961

In the report of a recent contract obtained in Australia, Mr G.W. Veel, Manager of the Victoria and Tasmania Branch, makes the wry comment : "Order signed nine years and six months after initial contact".

Misreading the signals   H.C.

It was in either 1960 or 1961 that ICT moved into Bridge House North, the first of the many buildings which the company eventually occupied in the Putney area. The front wall, just to the left of the main entrance, was a long and uninterrupted expanse of plate glass. Behind this, to impress the passers-by, was installed one of the biggest pieces of equipment then in use; it may have been a 555, but what it was doesn't really matter. It was, however, jolly bad luck that the girl who had stayed on late by herself to get an important job through the machine should contrive, while alone in the building, to get her hand stuck somehow in the card reader mechanism. With her free arm she made frantic signals for anyone to come and rescue her. The drunk at the bus-stop outside thought it was just grand; he'd never had such a pretty girl wave to him before.

A profitable sideline   Paul Embleton

One of the lecturers at Bradenham was an early exponent of metal detecting, and in one session about a less than rivetting subject was easily diverted into talking about his real enthusiasm. He had quite a good line too about the suitability of Bradenham Hill as a site worth searching seriously. After all, there were Roman remains in the vicinity, and surely we all knew about the Roman soldiers' habit of rolling coins down convenient hills for good luck or in the search for omens. There was much more of the same, which we sceptics in his class quickly decided was a load of bunkum. But it was such fun that we kept him at it, and when the school time for the day was over we challenged him to prove what he had been saying. We were so sure that we bet he wouldn't find anything. So, blow me, he went and located five coins inside an hour. Four of them were reasonably modern, probably dropped by courting couples over the last two centuries, but one of them - a tiny little thing - looked as though it could indeed be Roman. His moral triumph was complete. And though the coins he found weren't worth much at all, he took £30 in bets off us which, as he said, was a lot more for an hour's work than ICT was paying him.

Time like an ever rolling stream   1962   H.C.

Frank Ellison was a mathematician, a deep and serious mathematician. He found it quite incredible that, although I had a degree, I had no idea what polynomial interpolation was all about; but then I was a mere classicist. His grasp on the world of numbers and algorithms was secure. By contrast his sense of time was at best intermittent. He never arrived in the office at the start of the normal working day, but would usually be seen sprinting across Putney Bridge towards us just about when the morning coffee trolley was due to come round.

At 12.30 one day Iain Drummond suggested a break for lunch in The Eight Bells. "Good idea",

said Frank, "I'll come as soon as I've finished this little calculation". Iain and the others went off, had a normally long lunch, and returned. At half past four Frank laid down his pencil with a murmur of satisfaction, beamed round, and said : "Come on, then, let's go and have lunch!"

Counter-judgment   HC

Phyllis Arm-Riding had been preparing the weekly sales analysis summaries for as long as anyone could remember, and was extremely proud of them. They were documents of considerable complexity, lovingly produced in multiple colours by the banda paper reproduction process. But the time came when we had transferred the orders file from punched cards to computer (I think it was onto the 1500 at Bridge House South). Then the orders summary could be produced by the computer's printer. All right, the multi-colours weren't there, but all the other information was, and it could be produced and distributed several days more quickly. Peter Ellis decreed that the printout should now be treated as the official version, and the banda sheets were no longer to be produced. Roxby passed this instruction on to Phyllis.

Some weeks later he came across her in a secluded corner of the office, scrupulously preparing another set of banda sales summaries. "But, Phyllis", he said, "Mr Ellis said that we were to stop creating the banda summaries". "Yes, I know he did, Mr Slee", she replied, "*but I think he's wrong*".

History 4

In June 1962 there appeared Volume 1 Number 1 of *Computer Survey*, a quarterly publication covering the British Electronic Digital Computer Industry. It's full of fascinating details of computers installed and on order, with notes of the applications for each installation. And the advertisements are vivid reminders of how far and how fast the industry has advanced.

For example, **ICT**'s advert shows an outspread hand covering six ICT egg shaped symbols, five of them containing :

555	80-column Punched Card Computer
558	40-column Punched Card Computer
1202	80-column Punched Card Computer
1301	Punched Card and Magnetic Tape Computer
1500	Punched Card, Paper Tape, and Magnetic Tape Computer

The wording of the advert includes :
> 'The only company with computing power for every size of business';
> 'ICT SPANS THE WHOLE FIELD OF DATA PROCESSING'

and :
> 'Modern management looks to data processing to signpost the way to greater
> profitability. ICT installations, operating in their thousands in over 51
> countries, serve organisations ranging from the twelve-man firm to the giants
> of modern industry. Each ICT data processing system is made not from a
> mould but to the particular needs of the customer, even to the extent of
> providing a computer outside the existing range.'

The unspoken message is obviously : 'We've got the largest range of incompatible computers in the world'. I'm particularly struck by the promise to add even more to the range, making it even

more incompatible, if the customer wants us to.

And how about that 'over 51 countries' ? How much over ? 51½ ? 52 ?

The sixth egg contains only the mathematical symbol for infinity. Which model was that ?

NCR were proudly plugging what soon became known as one of the industry's lemons :

> 'This magnetic card is the heart of the NCR 315 Random Sequential Access
> Memory, an unparalleled advance in economical magnetic file processing.
> In effect, a reel of magnetic tape 3¼ inches wide has been cut into 256 strips
> forming addressable magnetic cards. A single card is capable of storing
> 21,700 alpha-numeric characters. Each card contains seven recording tracks
> that can be addressed electronically by the central processor.
> The 256 cards are housed in a removable cartridge that can be changed in less
> time than it takes to change a reel of magnetic tape! Up to 16 Random Access
> Memory file units can be operated on-line with the National 315, providing
> 88,883,200 alpha-numeric characters, an unprecedented capacity for a
> Random Access Memory'

Remington Rand's UNIVAC Computer Division poses the fascinating question :

> If it takes 73⅓ accountants 1423¼ hours to balance $219^{1}/6$ ledgers, how
> many accountants will it take when business increases 168% and how long
> will it take then?

LEO boasts with justifiable pride that the Metropolitan Boroughs of Woolwich, Bermondsey, Southwark, Deptford, Camberwell and Greenwich have combined to order a Leo III computer.

Beyond the call of duty   **Jeff Smith**

JADPU was the euphonious name for the joint Home Office and Metropolitan Police ADP Unit at Portman Square. Bill Dare was the site engineer. Somehow it became necessary to test the functioning of the smoke detectors fitted in the cavity under the false floor. With typical willingness, Bill volunteered to crawl about underneath with some smoke-generating kit and confirm that everything was well. The rest of the party carried on with other progress-chasing activities. Time passed. Eventually it occurred to someone that no alarms had gone off and there hadn't been any sound of Bill for ages. They explored, urgently, and just as well : in the dark and the fug beneath the floor Bill had choked and passed out. He had to be dragged out, and it took quite a long time to revive him. In the excitement it was quite overlooked that the smoke alarms were obviously *not* working.

Of stable doors and papertape   **Jeff Smith**

The Computer Manager at JADPU was called Norman Batten. He was ex-military, and had definite - some would say pompous - attitudes toward correct behaviour and adherence to site discipline. Not surprisingly, he took a dim view of programmers in the computer room. But the programmers, as they all always did, felt that overpowering natural urge to get as close to the

machine as possible when it was running one of their programs under test. Standing orders wouldn't keep them out. Notices were ineffectual. Threats were ignored. Disobedience seemed destined to win hands down. And the culprits were always so elusive; it was devilishly frustrating. Then he had a brainwave, and made it mandatory that there should always be a piece of papertape stuck across the inside of the door, firmly fixed with sellotape to the frame and wall at each side. Then any incursion would mean a broken piece of papertape, and the evidence would be conclusive. Besides, it was easy for him to keep an occasional but seemingly casual eye on that door from his normal position.

The diagnostic umbrella   **Frank Tilley**

It was around 1962 when I was the manager in charge of the engineering effort at the new computer centre at Putney Bridge House. We had two 1301 prototypes known as P1 and P2, and to give maximum up time for the programmers we ran them for three shifts, seven days a week.

With masses of discrete components soldered onto PCBs which were wire-wrapped to the main bus circuits, fault location was a challenge only surpassed by the old Keystore punch.

I came in one morning to learn that P2 had been out of action all night, the engineers unable to find the trouble because the fault was intermittent. Shortly afterwards in came Tony Russell, the 1300 engineering manager. Tony was renowned for always carrying an immaculately rolled umbrella. He stormed in saying : "What's up with this bloody thing ?", at the same time striking the top of the console with the aforesaid brolly. To our astonishment the elusive fault came on solid, was quickly diagnosed, and put right.

Test results   **Frank Tilley et al**

The 1301 console was equipped with ten hand switches whose setting could be tested from within a program. For example, if a program had to perform different actions according to the day of the week, one of the most efficient ways of controlling this was to have the operator set the appropriate switch before pressing 'Start'. Testing the switches might have been one of the more boring maintenance tasks, but some genius ensured that it wasn't. The test program produced repeated banner prints of a good-looking girl; one version purported to show Brigitte Bardot. As each switch was set ON one part of her clothing would disappear. By the time all ten were ON, her strip was complete and she was all OFF. Nobody was ever in any doubt that the switches were working.

Top Quality   **Peter Hall**

You will find this difficult to believe. I did, and I still do.

After a satisfactory meeting with the top data processing management at Norwich Union we took the two top men out to dinner. After dinner they suggested that we should drop in on the Orion night shift, and since we were staying the night in Norwich we felt happy to do so. We wandered round the computer room chatting to the staff. and, as we passed the printer, they invited us to look at the quality of the renewal notices streaming out. We did. Whose notices were they ? None other than the Royal Family!

A Customer's View   **1963**   **Alastair Moncur**

I worked for a few years as what was then called a systems analyst/programmer for a customer - the United Steel Companies Limited - who had their head office in Sheffield and works in various places around the north of England. This meant that I became a member of a working party assembled in early 1963 to recommend which computers should replace the ICT 1202 computer at head office and the punched card installations at five different works.

All the manufacturers then in the business showed the expected interest, and we were wined and dined, and talked to, and demonstrated at for months. When any hint got out that we were near even to making a short-list, each manufacturer came back to us with their even newer and better offerings. It seemed the process would never end, and we agreed that as good a solution as any would be for our chairman's daughter (if he had one) to marry the son of his opposite number in one of the manufacturers.

Eventually, we short-listed three : ICT, English Electric and IBM, and went the rounds again with them. A very senior manager of English Electric told us that the company took the line that its products were so good that significant sales effort was unnecessary. ICT seemed to take the view that pouring unlimited alcohol down our throats, and teaching us to play weird games with billiard balls in their Park Lane HQ, would overcome any product deficiencies in the 1301. IBM, I regret to say, seemed the most professional of the three, but didn't do themselves much good by attempting to poach a few of us to work for them.

All of them showed disquiet when the purchasing representative on the working party gave them copies of the official United Steel technical standards specification, which included the need to demonstrate that any product could withstand being bounced continuously on a concrete floor from a height of three inches, and withstand also a defined amount (I've forgotten how much) of steam or spray for a period of twenty four hours.

It finally came down to the ICT 1301 and the IBM 1401. Patriotic purchasing was more prevalent then than now, and most of on the working party were content to let 'Britishness' be the deciding factor when the other factors seemed to balance each other out. Unfortunately, one strong member kept pushing the argument (which I heard again all too often over the years while working for ICL) that, however good the ICT offerings were, and however British, it must be a mistake to buy capital goods from a company which was unlikely to survive. (That was 33 years ago at the time of writing.)

For the sake of completeness, I record that a typical committee compromise was made, and United Steel ended up ordering 2 x 1301, 1 x 1300, 2 x 1401 and 1 x 1440.

Life in the old colonies   **c 1963**   **Graham Morris**

Several of us went to Cherry Hill in New Jersey for a programming course on the RCA 301 (known in UK as the ICT 1500). Faced with this unknown quantity, a bunch of limeys, the instructor's first words were : "God bless the Queen ! God bless Prince Phillip ! God help me !!"

Lethal weapon   **1960s**   **John Scarlet**

While cleaning the Bryant discs it was always a good idea to keep hold of the cloth. On one occasion one of us lost his grip on it. The cloth obviously tried to catch up with the disc's

rotation speed before centrifugal force took over. The rolled-up cloth came out even more tightly rolled up and as straight as a short javelin. It sped, "And flashing round and round, and whirl'd in an arch, Shot like a streamer of the northern morn" across the computer room. It was the supervisor - it would be - who as near as anything got it in the neck.

Well, of course, they would, wouldn't they ?   Ron Hodges

There was a viewing gallery outside the computer room, and on its wall hung a Bryant disc, one of the many which suffered a head crash, but which didn't suffer the indignity of being turned into a coffee table. Visitors would often marvel at the size of it. But it obviously hadn't been successful, or it wouldn't have been there. I once heard this most beautifully explained to a party of trusting visitors : "No, this type of disc was perhaps a bit ahead of its time, and wasn't totally successful. You see it spun so fast, and the centrifugal force became so great, that the magnetic bits tended to slip to the edge of the disc and fly off."

Age-span   1960s   Philip Virgo

We were on a PLAN conversion course, and some ex-Orion programmers from the insurance market wanted to know whether 1900 date-conversion routines could cope with a) pensioners born before 1/1/1900 and b) youngsters not due to retire until after 31/12/1999. Without a flicker of hesitation the instructor replied : "a) - Yes; and b) - I'll have to find out". The next day he came back with a second Yes.

The second Yes may have been right; the first one almost certainly wasn't.

Static Problems   Keith Crook

As October 1964 approached we were working whatever hours were available to get the 1903 ready for the exhibition.One evening, whenever we tried to load the system from papertape, the tape would get to some point and then just stop. The point were it stopped was random, and we were baffled. We went off for a meal and returned to tackle this problem again. The main hall lights were off, but we could see enough to start again trying to load the tape - time was that precious. About half way through the tape an enormous spark leaped from the tape bin to the reader and everything stopped dead. Solved! Massive build-up of static in the collecting bin. The reason why it stopped at a different place was that the bin was on wheels, and its distance from the reader varied enough for the static to take a different time to build up until there was enough energy to bridge the gap. The voltage must have been measured in hundreds of thousands of volts to leap up to an inch in normal atmosphere. Who knows? The 1903 might never have happened if a security man hadn't switched the lights off while we were away.

The PCB Tester Mark 1   Alan Wray

In the days of yore, faulty PCBs had to be tested either on a customer machine or in a test-bed machine, usually in the factory. ICT had no 1500 factory, because it was in RCA in the USA. RCA kindly offered to repair faulty PCBs, with a six-week turn-round, and to supply ICT with a PCB tester, both at exorbitant cost. When we turned that down they supplied drawings and a specification, and I built a tester myself, including the power supplies, at a fraction of the cost. It wasn't too elegant, but it did a good job for the life of the 1500, and was probably a first of its kind for ICT/ICL.

Wet Wet Wet   **1963**   **Alan Wray**

I took the emergency call in FEHQ from Tony Morton, the ICT 1500 site engineer at Wm Cory in the City of London. 'Help', he said, 'I've got permanent "P" on the bus'. Now the 1500 had two registers, P and Q, connected to the data bus. The easiest problems to solve were those with permanent symptoms, so I could not see why it was an emergency call. That is until he explained that the gents' loo, one floor up, had flooded overnight and the processor was saturated with pee.

Thuggery   **Peter Hall**

It was natural that the newcomers to ICT - that is the Ferranti lot - should be subject to scrutiny by the parts of the old company who would have to get involved with the new upstarts. Thus is was that we had a visit to West Gorton by a couple of gentlemen who, after they had given us a thorough going over, I marked down as a couple of pitiless thugs. In fact those two guys later became very good friends indeed. They were, of course, the two home Sales Managers, Cliff Oldham and Ken Allen. At the time we were all feeling very nervous, wondering what the future held, and to have that in-depth interrogation into our affairs was quite exhausting and threatening. However, I suppose it did us good; we had certainly never experienced anything like it before.

Many years later both Cliff and Ken were on my staff and we made, I believe, an excellent and certainly a very happy team.

What wasn't on   **Peter Hall**

Just about the time of the takeover, a team of us went on a visit to the States. Our first stop was New York where we were to be based for about a week. Arthur Humphreys and I shared a suite in the Westbury - rather a nice hotel. Every evening Arthur suggested that none of us wanted to go out for a meal, so why didn't we stay in the room, have a few drinks, a ham sandwich, and a few games of liar dice. So we all concurred - after all he was the senior man ! After three or four nights of the same routine, one of our party - Hugh Devonald - at about 2 or 3 am, and well the worse for the "few" drinks and some heavy losses, suddenly exclaimed that we were wasting time and that it was time we set out to see something of the nightlife of New York. He got up from the liar dice table, grabbed the "*What's on in New York*" magazine, sat down in an armchair, and passed out. Much later on Arthur and I went to bed, leaving him peacefully asleep. We were worried next morning to find that he had disappeared. At breakfast we heard his story. Apparently on waking up in the early hours he returned to his room only to find that he had no key. The Hall Porter was very suspicious of a man alighting from the lift and asking to be let into his own room at something like 6 in the morning.

Decision Time   **Arthur Humphreys**

About mid March 1963 I was told to visit the Ferranti Packard Company in Canada to look at the FP6000, and to take appropriate colleagues with me, making the necessary arrangements with Peter Hall. He had been the key figure in persuading Ferranti to merge its Computer Division into ICT by using imaginative and determined pressure, and as a result serious talks had been under way since January. Accordingly I set out with my colleagues Echo Organ, the head of ICT's Engineering and Development Group, and Tom Shepherd from Product Planning, together with Peter Hall and Hugh Devonald. We travelled to Canada by way of New York. The

presentation of the FP6000 by Ferranti Packard staff was expertly done. Echo, Tom and I were very impressed with the specification and during the several days of our stay were very impressed also with the possibilities of enhancement into a compatible range. Echo returned home, and Tom and I went to see RCA in Cherry Hill and were brought up to date with their plans and problems. It was Good Friday.

Returning to the UK, Tom and I met with Cecil Mead on Easter Monday, and I recommended the adoption of the FP6000 and the dropping of our own developments - assuming that the deal with Ferranti would be brought off. Cecil Mean simply said: 'If that's what you think, let's do it!' This turned out to be a £2 billion decision. Work and collaboration continued from then on alongside the negotiations for the sale by Ferranti to ICT of its Computer Division, and the deal was presented to ICT's shareholders at an Extraordinary General Meeting at the end of September 1963. At the meeting it seemed that nobody had any questions until a sixteen-year-old lad with a helmet in his hand and, I think, ten shares said to the Chairman: 'You have clearly paid too much for the business, so when are you going to resign?' Despite that, the shareholders approved the deal. So for the rest of 1963 and into 1964 ICT, now strengthened with Ferranti computer staff, proceeded with the development of the 1900 range and with putting it into manufacture.

One ICT   **c. 1963-4**   **Philip Sugden**

As one might expect, conflict of interest between different parts of the company is not a recent phenomenon. It is, I suppose, an inevitable consequence of changes in structure to meet new market needs and forces. In the early to mid sixties, as computers were increasing in importance at the expense of the traditional punched card systems, ICT created some vertical market sales teams. It was not universally popular with the existing geographically organised sales force and management who saw the new structure as taking away some of their best customers and prospects. I joined the Public Utilities national sales team as a junior technical advisor and was based in the Bristol office, where for a while I was the only PU member of staff. The local view of my presence was summed up during a visit by the UK Sales Manager, Lyon Lightstone, when I was introduced by the regional sales manager as 'The Cuckoo in the Nest'.?

Data transmission technology   **1964**   **Alastair Moncur**

Once the ICT 1300 was up and running at United Steel's Sheffield head office, it was decided to investigate the technical and economic feasibility of using some of its spare capacity to run the payroll for a subsidiary company in Barrow-in-Furness. Various possible methods of transmitting the input and output were investigated, with due regard for the security of confidential information, as well as reliability and cost. Telex, teleprinter and other technological possibilities lost out to the use of the chauffeur-driven car which already made the two-way journey most weeks.

Australian self-sufficiency   **1964**   **Giles Scott-Giles**

I went out to Brisbane with the first 1903 to reach Australia, to help the local engineers install and commission it for the Queensland Treasury. A few days later the full-page advertisement in *The Australian* proclaimed : "Fully operational in 72 hours". I suspect that this announcement had been decided upon some weeks in advance, and that had we failed to achieve it I would have been croc-fodder.

Progress was abruptly arrested on the second day, when a vital part of the console typewriter broke. On unpacking the spare, the same vital part, a long wiggly metal stamping with two critically positioned slots near one end, was also found to have been broken in transit.

While I was engaged in frantic telexes to Stevenage, and a fruitless search for any computer site in Brisbane holding Westrex spares, one of the local engineers, Vic Dowth, took charge of one of the broken specimens and proceeded to handcraft a replacement, using hack-saw and file, out of the blade of a rotary mower. We fitted it and it worked ! By the time I left for home a genuine Westrex spare had been obtained, but Vic's home-grown part was still in place and giving stalwart service.

After this experience, Westrex model 33 console typewriters were always shipped with the H-plate removed for transit, to avoid damage to the Keyboard Universal Lever.

Numeric niceties   c 1964
HC

We had just been set up as a dedicated systems analysis and programming team to develop internal ICT applications for management based in Putney. Tony Chandor was in charge. We received our very first development commission, probably for something to do with the orders file. I produced the first planning documents, and naturally numbered them "Project 1". "Oh that will never do", said Tony; "People will think we're complete beginners. Call it 'Project 17'".

Static problems again   Keith Crook

Unknown to many, ICL was responsible for interfacing to a computer the first electrostatic printer in the UK. It was an American device, but the first one over here. It was the precursor of the modern laser printer, and used tiny needles to charge the paper with the pattern required. I happened one day to be wearing shoes with well-insulated soles and a suit that generated static by the megavolt almost. Showing a group of visitors round the computer suite at Stevenage, I had set up a print program, and then with a fine flourish pressed the Allocate button on the printer. I felt the jolt right up my arm from the static discharge. Not only did the printer not start, the entire computer suite stopped. Several boards inside the printer had been blown up, as well as a few inside the processor. It took two days to find and repair them all.

Definitions   Arthur Humphreys

Before 1900, ICT = 'In Constant Trouble'

Post 1900, ICT = 'In Comparative Triumph'

Making a virtue of necessity   Virgilio Pasquali

"The initial 1900 range did not suffer from the many years of careful planning behind the IBM 360".

Who said that ?   Peter Hall

After a while I was appointed to the main Board of ICT. At West Gorton we had a male

secretary - the shorthand typist sort, not the company secretary sort - a relic of earlier Ferranti days and the last of a number of Ferranti male secretaries. I thought he was a sensible and friendly guy, but he turned out not to be so.

At my first AGM there I was sitting, for the first time, with all these important characters, and feeling a bit of a fraud, in front of quite a large gathering, when at question time up pops my 'friend' and asks : "Would the Chairman please explain what advantage the Company gained from Mr Hall's three week trip around the United States ?" How I wished I could have fallen through the floor. Instead I waited with bated breath to hear the Chairman's reply. But he only said : "Perhaps you had better answer that, Mr Hall". I never forgave him for that. I certainly can't remember what I said.

Financial training   Peter Hall

It was another of our trips to the United States with Arthur Humphreys, so it was liar dice again, but this time the stakes went up binary fashion. They soon got appallingly high, but it all evened out - sort of. I remember someone passing on an impossible deal and whispering to me : "That is next term's school fees" !

IBM catches up   Arthur Humphreys

In early April 1964, Basil de Ferranti, Peter Hall and I were in the States for talks with RCA, Univac and others. Peter and I were invited by RCA to attend a presentation to be made by IBM specially for RCA as one of its important customers. Peter and I introduced ourselves to the IBM staff and listened to what was revealed - it was the 360. Peter and I adjourned with RCA top management and product planning staff to review the situation. It was April 7th. RCA decided that the announcement and the 360 did not adversely affect their plans, and we recognised that we were already committed to the 1900 and could not change anyway!

Thereafter the rest of the summer presented a formidable challenge to the Cpmpany and particularly to its sales force. Against all the announced promioses of all the goodies of the 360 we were not in a position to formally launch the 1900, and the Press unkindly but accurately pointed out that ICT was seeking to sell 1301, 1500, 1100, 2400, Orion, and Atlas, and described it as the largest ragbag of incompatible computers it was possible to imagine.

Rubbing IBM's nose in it   Gavin Adams

The first time 1900s went on public show was at a Business Efficiency Exhibition at Olympia, but this had to be arranged with some degree of secrecy, in order to prevent the company's rivals finding out what we were up to. A large and complicated stand was ordered, with a catwalk arrangement round two significant open spaces. This was described as being needed for the display of two large and complicated assemblies of punched card machinery. In fact the two open spaces were neatly designed to be just the right size to accommodate a 1902 and a 1904. When IBM found out that we were going to be exhibiting *computers* they were reported to be livid.

How to do a proper launch   Arthur Humphreys

In September, coinciding with the Business Efficiency Exhibition, the 1900 Series was launched

in quite a special manner, and the 1902 and 1904 models were at the Exhibition and available for customers to see and touch. The announcement was made simultaneously throughout ICT's market, and involved members of the Board as well as senior executives in Sales and Marketing. The script of the presentation was written by Tony Jay, who had with Donald Baverstock, Alasdair Milne and others presented the *Tonight* programme on TV for a number of years, and a number of TV techniques were used in the presentations which Tony Jay produced.

The launch was an immediate success, and orders were secured for the new line of products on a scale entirely new to the company. The severe problem of having to introduce into manufacture an entirely new range of products for delivery a year hence, which might have been expected to create a substantial shortage of revenue and profit, was avoided by the company because of the success in selling the 1004, which was itself profitable but required no investment in inventory.

Now, having fought our way through the conflicts of product plans and products the company had one range of compatible computer systems to sell.

Marketing Misfire   **1964**   **Philip Sugden**

When the 1900 was launched back in the mid sixties it was supported by full-page advertisements in the major broadsheet newspapers. At the time I was working on a customer site as part of a joint ICT/customer project implementation team. The customer was a 1900 prospect for another of their projects. To aid the sales cause we pinned up a copy of the advertisement on the project notice board. The effect that we were aiming for was somewhat undermined that evening when the cleaning lady came in, studied the advertisement for a while and then said : "1900 - that takes you back a bit, don't it ?"

The most important news of all

From the ICT House Magazine, no 62, May 1964

NEW MULTI-PROGRAMME COMPUTER LAUNCHED

Logical Place in the I.C.T. Range

The latest addition to our comprehensive range of electronic computers, the Type 1900 Multi-programme, Executive-control computer, was recently announced. British designed and manufactured, this computer gives the power of several computers within one frame and is fully competitive in terms of price and performance with any other system.

It offers, on the one hand, the substantial file-processing capacity required for Government, insurance, banking, commercial and industrial applications; on the other, the high speed calculating power needed for technical and scientific applications.

Up to 12 Programmes at Once

One of the most attractive features of the 1900 is its time-sharing or multi-programming method of operation, which enables the user to obtain the maximum economic advantage from the powerful central processor. It can accept and process multiple streams of data on unrelated problems from several different input sources at the same time, and produce simultaneous

solutions on several separate output devices.

Up to four programmes, each with two sub-programmes, that is 12 programmes in all, may be run at once with no risk of mutual interference. This means that the machine can handle the work of several departments of an organisation at the same time.

The multi-programming system is entirely automatic and the programmer does not have to consider it when writing his programme. He can even carry out programme testing while the main programmes are running. Running simultaneous programmes in order of priority and allocating the wide range of input, output, storage and communications devices is done by a master programme called Executive, which also protects the machine's unique reservation system that protects each programme from interference.

The operator communicates with Executive by using the computer typewriter, which is directly connected to the system, to pass messages in plain English. Executive then takes over completely and can send back instructions to the operator.

Well Balanced Machine

The I.C.T. 1900 is an outstandingly well-balanced machine. Its high speed of central processing is matched by the ability to get the maximum use from a wide selection of fast peripheral equipment.

The magnetic core store has a capacity of 8192, 16384 or 32768 words with an access time of two millionths of a second. Typical times for arithmetical operations are : addition or subtraction 12 millionths of a second; multiplications 26 millionths of a second; and division 47 millionths of a second. *[This reads as though 'microsecond' was not yet a commonly understood term.]*

Any reasonable number of peripheral devices can be attached, including magnetic tape units, printers operating at a maximum of 1,200 lines per minute, high speed card readers, card punches and paper tape units, and a direct access store in the form of magnetic discs holding up to 252,000,000 characters.

If required, there can be added high and low speed data links, communications buffers, multiplexers, analogue/digital converters and graph plotters, and equipment to permit several Type 1900 systems to be inter-connected.

Manufacture

This machine is one of the first fruits of the I.C.T. acquisition of the Ferranti Computer Department. The multi-programming principle was originally developed for the Orion computer and has been well proved by the use in that machine and the Atlas. Three installations are already operating in Canada..

The 1900 is being made at the West Gorton, Manchester works of our Computer Equipment Division. To the Central Processors built at West Gorton will be added a wide variety of peripheral devices, including many which come from other I.C.T. factories, such as Card Readers, Output Punches and Line Printers.

Calling Oscar   **Keith Crook**

During the 1903 computer development at Stevenage, some of the magnetic tape decks were supplied by a French company called 'C des C'. Their main contact with ICT was Oscar Citrine, and our design authority was one John Taylor. John firmly believed in the time-honoured theory that the way to deal with foreigners is to speak English very loudly and very slowly. Whenever he rang Oscar, the whole section around his office virtually came to a halt. One day, more in frustration than anything, a wag called out : "For heaven's sake, John, why not put the telephone down and just open the window!"

Of dates and wogs   **1965**   **Alastair Moncur**

My letter of appointment, received in late 1964 from Frank Sewell, ICT's Overseas Division Office Manager, required me to report for duty at Putney Bridge House (later to be known as Bridge House South) at 09.00 on Monday 5th January 1965. Challenge number one was locating the building: why on earth did ICT and ICL persist in referring to 'Putney' when this building and its twin were in Fulham ? Challenge number two was typical of many problems I had during my time with the company: the date did not exist. Was this a mistake or an initiative test ? I decided that it was more likely that I was expected to start on a Monday and so I reported for duty on the 4th.

As it turned out, my new boss, David Hughes, wasn't expecting me on either day, but he quickly found a chair for me, and later a desk, in an office shared with Derek Presant-Collins and Sue Robertson. Our tiny team was expected to provide a technical computer sales support service to ICT's experienced punched card sales force worldwide outside the UK.

Sue was a young Australian, bubbling with energy and enthusiasm and (I hope she will forgive me for saying so) in some ways a little naive at that time. The combination of those attributes together with a good brain and a pretty face made her very popular among the technical specialists whose back-up support we all needed.

One day, a few weeks after I joined, Sue didn't appear in the office. She rang in, mid-morning, and our conversation went something like this :
> "Hello, Moncur here."
> "It's Sue here ... Sue Robertson". (The addition was strictly unnecessary since she was the only Sue I knew who would have used a higher pitch for the 'here' than for the 'Sue'.)
> "Morning, Sue."
> "Alastair, I've been trying to get hold of David, but no one seems to know where he is. Will you give him a message for me?"
> "Of course."
> "Will you tell him I won't be in for a few days ? I'm in bed with a wog."
> "Sorry ?"
> "Will you tell him I won't be in for a few days ? I'm in bed with a wog."
> "I ... um ... all right, Sue."

I did so, and the word went round the building

She reappeared a few days later, and gave me the impression that she felt I had let her down in some way - that I'd failed to say something that was expected of me. It couldn't have been that I should have congratulated her on her frankness ? She read her incoming mail, and went off on

her rounds to collect specialist back-up advice.

When she returned, she appeared mystified by something and, when I asked if I could help in some way, she said : "It's just that people have seemed to be trying not to laugh when I've told them I've been in bed with a wog".

It was explanation time : *I* had not known that 'wog' means 'bug' in Australia, and her blush showed that *she* had not known its meaning in the UK.

Pakistan   **Alastair Moncur**

ICT Pakistan had on its payroll in 1965 an employee named Nosher Canteen-Wallah.

Hong Kong - Into the mouths of babes and sucklings   **Alastair Moncur**

A cub reporter on the South China Morning Post was required in early 1965 to write an article on computers in the colony, and decided that the best way to get a balanced overall picture was to collect and synthesise the views on each other of all the computer manufacturers represented there - (research, you understand, not cheating). I was nominated to be interviewed on behalf of ICT locally. With tongue in cheek, I described IBM as a typewriter manufacturer which was trying to get into computers. He printed it !

Staying 'on message'   **1965**   **Brian John Smalldon**

The location was the B.P Refinery in Aden. The 1901 computer had been installed, fired up, tested and approved, and was now to be formally switched on by the B.P. General Manager. He was like God there, before and after the computer.

The introductory demo had been written by the ICT programmer/instructor. At the crucial moment the General Manager was invited to press the Accept key on the console teletype. The machine responded with the tune of a jaunty little commercial jingle. Everybody recognised it, and everybody knew that the words went : "The Esso sign means happy motoring".

Fortunately God had a sense of humour.

It's midnight on the 1903   **c 1965**   **Dick Hodge**

It seems strange now, but in those days we had to stop the machine at midnight in order to change the date. The only way to enter the date was to reload the Executive program from its large reel of eight-track papertape and, at the end, it asked for the date to be typed at the console.

One night the Executive refused to reload properly, and we called in the night shift engineer - Leon Harding. It was obviously a difficult problem as Leon crawled all over the 1903 and swapped boards furiously. I think my team of operators got through a record number of games of cards because it was nearly four in the morning before Leon appeared, looking like thunder and very, very angry. "OK ! Who was the idiot who left the five-track code boards in the papertape reader ?"

I didn't have the courage to ask why such a simple problem had taken so long to diagnose.

The origin of 'GEORGE'   **George Felton**

About January 1965, there was a meeting in my office, while I was away abroad, discussing different ways of allotting functions between the proposed operating system and Executive. Scheme A was discussed and rejected. Scheme B ditto. And Schemes C, D, E and F were also discarded in quick succession. When Scheme G came up, everybody was happy, and it was decided to adopt it. The 'GEneral ORGanisational Environment' was also quickly formulated as the official expansion of the acronym. But the name 'GEORGE' was in any case a natural choice: it had echoes of aircraft autopilots; it was a bit of fun; and I certainly wasn't going to object.

He knows, you know

As part of his presentation to the 1900 Seminar of the Computer Conservation Society, in about 1996, Brian Proctor showed a series of photos of the available peripherals. One showed a slim and fetchingly mini-skirted model picking a document out of the stacker of the redoubtable Universal Document Transport. Comment from Mike Forrest: 'I think that's one of the cases where the top half of the lady and the bottom half are in fact different people'. Voice from the back: 'How do you know?'

The Chinese 1903   **Keith Crook**

Exports to China were subject to COCOM regulations and it was felt that a Teletype (an American gadget) stuck in the most visible spot on the computer just wouldn't do. So we had to construct an equivalent - in fact a pair of them. There were several problems, needless to say. First, whatever we made had to be exactly compatible with the Teletype. How simple that mechanism is, and how difficult it was to reproduce using electronics only became evident later. What was even more difficult was finding a non-American mechanism. There was just one UK typewriter company - Imperial at Leicester. We bought two machines from them. Shortly afterwards they either went bust or were taken over by an American company, so we were probably in technical breach of COCOM despite our efforts. The cost of the entire exercise was horrendous. Whether or not it was commercially sensible we shall never know, but it must have been very marginal. No other machines were sold into China so far as I know.

Fringe benefit   **1965-80**   **Philip Sugden**

In the sixties and seventies the Putney Demonstration Centre offered a buffet catering service for use when customer presentations and demonstrations were being held. It was customary to offer a range of alcoholic drinks including beer, wines, sherries and spirits. Initially the charges for sherries and spirits were based on the proportion of the bottle consumed. This inevitably led to disagreements about exactly how much had been consumed; was it a quarter or a third of a bottle, etc., etc. To avoid disputes, the rule was soon introduced that, if the bottle was opened, the responsible sales area was charged for the whole bottle. It did not take too long to establish the corollary that the responsible sales area was therefore entitled to take away the unconsumed portions. It was not unknown for customers to be encouraged to try a drop from each bottle, often with generous assistance from the sales staff. Many a Christmas party was enlivened and many a drinks cabinet enhanced on this basis.

*, **, ***, **** and *****   **c. 1965-6**   **Philip Sugden**

The 1004 Data Processor was the final flowering, or last gasp depending on your point of view, of the punched card era. ICT acquired the rights to sell the 1004 in the UK and some other markets from Univac, who designed and manufactured the system in the USA. It was introduced in about 1963 when second generation computer systems, such as the ICT 1301, ICT 1500 and (unfortunately) IBM 1401, were being sold in increasing numbers to larger customers but the majority of sites still consisted of tabulators and calculators. The 1004 prolonged the active life of many an ICT punched card installation and typically performed the functions of two tabulators and a punched card calculator. The system price tended to be in the range from £35,000 to £50,000 whereas most computer systems of the day cost at least £100,000.

It was something of a hybrid system. Programming was relatively conventional with an instruction function and two addresses. The number of programme steps was limited to 62, but by cycling round and re-using instruction sequences, comparatively complex processing could be achieved. It was controlled by a plug board in the traditional punched card manner, the program being hard-wired via the plugboard. Each plugboard came with its complement of plugwires. The wires projected through the board and made contact with a matrix of sprung prongs which were platinum plated to give the least possible electrical resistance. Great care was needed to ensure that these prongs did not become bent and fail to contact the corresponding plug. If this happened, the result was unpredictable but never beneficial!

The store size was 961 characters, a 31 x 31 matrix of ferrite cores. Cards were read at 400 cps and punched at 200 cps and line printing was at 400 lpm. All these speeds were twice or more those of the units that the 1004 replaced.

Sometime during the mid sixties I was working on a 1004 implementation at a customer site. It had been sold as a loss leader for a much larger potential computer system order. In the event it turned out to be all loss and no lead as someone else won the big bid! At some stage a sales manager had said that if the customer specified the system ICT would program and implement it for them. Managers made those sorts of rash promises in those days! The customer took ICT at their word and designed their system with all the bells and whistles that they could think of.

One of the features of their existing punched card system was that intermediate and final totals were designated with '*' and '**' respectively. The new system, as well as being much more complex than their existing one, was to have five levels of totals, designated with one to five asterisks, as appropriate. I was assigned to programming and plugging a sub-system of four or five 1004 programs. All but one were relatively simple and did not take too long to write, plug and test.

The last program was highly complex, an absolute stinker. It took more than two complements of plugwires. The combined weight of the plugboard and wires made it so heavy that it took two operators to lift it into the 1004. After much time and effort I managed to implement the full program specification with the exception of the variable number of asterisks. I knew that this was going to be a problem as the customer seemed to set more store by having his asterisks than any other feature of the program. I went into the progress review meeting with the single objective of NOT having to implement the asterisks. After a discussion lasting well over an hour I had been talked into having one more try to include them. It was only later when I had given

up on the asterisks and was checking some of the calculations that I found that a late change to the program had caused nearly half the totals to be calculated incorrectly. Because of the focus on the great asterisk debate none of the customer's staff had noticed! I corrected the error but gave up on the asterisks. Eventually the customer found something bigger and better to worry about and I was let off making any further enhancements to the program.

Remote testing - how we hated it   Alan Trangmar

One of the first jobs for any new trainee in the Stevenage programming department was to divide up and hand out all the print output brought down from Letchworth in the morning van. It was boring, but not a bad way to get to know people. There were only a few occasions when more than a whole box of test output came back for someone - very embarrassing, because it was such a visible and physical indication that a program had got into a loop. Of course, the ex-operators in the department always said that their successor operators *should* have detected and stopped the loop earlier, and that standards were slipping ...

Remote testing - how we also hated it   H.C.

At Putney we were even further away from the computer service in Letchworth, and the pace of life seemed often to be dictated by what came back in the morning van - if anything did. In retrospect it seems incredible that for what seems like a couple of years the entire productivity of the system development function was held down by a grossly inadequate amount of access to a machine for testing. I reckon we got about a quarter of the testing time that we estimated we needed. This led to a bizarre priority-setting ritual every afternoon.

Each job was described twice, on two halves of an eighty column blank card. There was a priority classification, something novel and original like A, B, C, D, denoting the relative urgency of the task. It was always a struggle to prevent everything being automatically classified as A. The other important criterion was expected run time : a two minute D job might well stand as good a chance as a sixty minute A. But, of course, estimating the expected run time was a wildly inaccurate business, because one could never tell with what other work a job would be multi-programmed.

In the last minutes before the van left for Letchworth the final sequence of the job description cards would be decided. One pack of half-cards went with the work in the van. The other set of half-cards were hung on the wall in a home-made array of transparent open-topped pockets, so that by looking at the wall one could see what jobs had been submitted, and in what priority sequence they had been arranged. It was pretty Heath Robinson-ish, but the best we could achieve.

It usually seemed to us that the Letchworth operators blithely ignored our priorities and selected a completely arbitrary set of jobs for running. They may have had their reasons, but they never told us what they were. When the morning van was unloaded, the returned half-cards for jobs run were matched with the half-cards hanging on the wall and removed. The remaining cards on the wall then showed which jobs had not been run on that night. The unlucky jobs would then be promoted in the next afternoon priority-setting debate. When things were really bad it might be three or even four nights before a job was run.

That the system worked at all was largely due to a formidable lady called Ursula White. Born

in Germany, she had married a British soldier in BAOR, and when her children were grown up she took a job with our part of ICT. She had all the orderliness and discipline of her native country, and when she had decided that a job could not be promoted to a higher priority she was rock-like in her refusal to change it. But she had great good humour, and managed the impatient young programmers around her with aplomb.

It was a pity, really, that when we eventually got some online access to a George 3 service her function disappeared and she left us. But what a difference it made to the testing process !

Divided by a common language   1966   Alastair Moncur

I was sent by ICT in August 1966 to negotiate a deal with a Bermuda-based American insurance company, which had 'discovered' ICT in Hong Kong and was planning to install computers in half a dozen countries.

I liked their consultant, Frank Eckert, and his wife and two small children, and was delighted when he rang my hotel to invite me to lunch with them on my second Sunday. "Bring a suit", he instructed. Though surprised at such formality, I did so, carrying it through the streets of Hamilton in a suitcase rather than draped over my arm.

An eyebrow was raised, but no comment made, when Gail took the case from me on arrival. We had a drink, then an excellent hot-weather meal, and one of the children complained that we were being too slow in getting down to the ocean for a swim. "I don't have any trunks", I commented, hoping that Frank would lend me some. American politeness and the language difference meant that it was a minute or two before I realised that they hadn't wanted me to take a lounge suit after all.

Cyprus - show me the way to go home   Alastair Moncur

My five week trip to Cairo, Alexandria, Suez, Teheran, Baghdad and Beirut in early 1966 had been interesting and enjoyable. It had also been tiring, and I was looking forward to getting home to London after my last scheduled visit, which was to ICT's only customer in Cyprus. On presenting myself to the MD in his Nicosia office, I was handed a telex addressed to me from George Redhouse in Putney : "On your way back, please call in on Aloy Jayarajah in Ceylon".

Western culture   1960s   Alastair Moncur

During the same period a few of us who were travelling regularly to Czechoslovakia compared notes, and discovered that each of us had been asked, more than once in my own case, to take a Monopoly set out on our next visit. Apparently it was believed that westerners taught their children capitalism by playing Monopoly with them.

Eastern culture   1960s   H.C.

Question : How can a blind man in Prague tell the points of the compass ?
Answer : He stands in Wenceslas Square with a piece of coal in his hand and turns slowly round. When it's taken away, that's East

Culture clash   1966   Alastair Moncur

INCOMEX, a computer exhibition held in Prague in May 1966 was the first occasion on which western computer manufacturers were allowed to display their wares officially behind the iron curtain (although a number on installations had already been sold to State organisations). Most of the then separate British manufacturers were represented, together with IBM and a few other non-British ones. Visitors were shepherded round in groups, and all of us were making instant quotations worth many millions of pounds each day, having no idea which, if any, of the visitors would receive the necessary hard currency to buy a computer at all.

The exhibition was so successful in its first few days that the exhibition director decided to increase the number and frequency of the groups. The air conditioning couldn't cope with the extra load, and soon our engineers threatened to switch off the system unless something was done about it. To our relief, other companies were having the same problem and our 'solidarity' make the director back down, after much huffing and puffing. This was obviously amazing to the locals, who had no experience of a successful stand against officialdom.

Cultural exchange   **1966**   **Alastair Moncur**

On a purely personal level, INCOMEX 66 presented me with another one-off experience. I managed, in a mixture of broken German and English, to ask out for dinner an attractive Czech guide, who was bringing groups round several times a day. She accepted, but during her later visits we agreed that we were going to have difficulty communicating - and I ended up paying for our interpreter's dinner as well as ours.

A Swedish clanger   **c 1966**   **Giles Scott-Giles**

The 1933 line printer was a noisy beast, in spite of all the sound-damping material on the inside of the covers and packed tightly inside the hollow steel print barrel.

I had flown into Stockholm en route to a support call further north, possibly at Gävle Stad. Pausing briefly in transit at the ICT (or L.M. Ericsson) office I could hear a 1933 hard at it somewhere in the building, its print barrel ringing under the assault of the print hammers like all the anvils of Nibelheim.

I made some comment to Stellan Jönson, one of the Swedish engineering supervisors, who told me earnestly that when installing the printer they had experienced much difficulty in extracting the "packaging material" from the print barrel.

The Program that zeroed itself   **(c 1966)**   **Dick Hodge**

Programming can be a tough life. The programmers used to book time-slots on the 1903 in the daytime and watch their programs run in person. Sometimes, if the fault was simple, they could fix the problem and have another trial run within their allotted slot.

One day one of the newer programmers was not so lucky. His program went 'ILLEGAL' and he asked us to print the first 10,000 words of memory, a task that could take up to about ten minutes.

This time the printer only printed about six lines and stopped. So the programmer repeated his request. We looked at the console and, sure enough, we had typed the correct command. But

being true professionals we retyped it and those same six words of memory were printed again.

The programmer was rather bemused and did not immediately understand what had happened. His face dropped a mile when I pointed out that the rest of his program was all zero!

The biter bit **Frank Taylor**

About 1966 ICT produced the truly magnificent specification for the proposed 1830 Graphics Display Unit for 1900 series machines. It was probably a mistake for marketing to allow salesmen to get their hands on it, but mistakes do happen. John Fotheringham, ever the opportunist, managed to sell one to be installed in China of all places, and another to a blue chip company in the UK; this would have been a real feather in the corporate cap if it had ever happened. His justification was that this was going to be a magnificent combination of the very best hardware and software; the basic hardware was already available, and the application middleware would follow shortly.

Peter Hunt in Reading was the manager whose division included the team responsible for developing the software, and he at once came under the barrage of John Fotheringham's demands for its instant completion. "We're working on it; come back to me in a week" was the fairly stock response to the first badgering, and a variant of it just served to counter the second and more urgent pestering. But Peter could foresee that this was going to go on and get worse, and took steps accordingly. So when the third week came, with John's really clamorous insistence that he'd absolutely got to have the software, right away, and he couldn't accept any further delays, the elegant and smooth answer was lined up ready : "I've got the perfect solution for you, John. I've cleared it with the powers that be and you're now the project manager responsible for the software, reporting to me".

MEDS **Keith Crook**

The large discs (30 or 60 Mb) on the 1900s were marketed under the name 'MEDS', standing for Multiple Exchangeable Disc System. There was a worldwide launch followed, after a very brief delay, by a telex from Australia pointing out that, in that country, MEDS was the name of the main supplier of feminine hygiene products. The products were rapidly renamed EDS30 and EDS60.

The early EDS-60 Controller   **c 1968** **Dick Hodge**

We thought that these big (!) disc drives were fabulous - 60 million characters from a unit only the size of a washing machine. It was the halcyon days of the customer choosing between us and the competitive offering from Big Blue. Very often we were asked to run a benchmark test of some kind, and the customer would attend and time the total processing run.

We used to spend much time and thought tuning the workload to maximise its throughput but, on this occasion, the team were a bit puzzled as it was taking rather longer than was hoped. There was, as ever, too little time to investigate every detail. The customer arrived and the benchmark was run. We lost the order. Sales launched an immediate postmortem.

The strange thing was that a seemingly identical second run would take a different time. That's supposed to be impossible, but it did seem to be the case. I was tasked with finding out what was

going on.

Dave Howse and I wrote a number of timing programs with the objective of plotting disc transfer throughput as a function of block size and seek tests as a function of the number of cylinders jumped. We too were getting different timings on different days ! We reduced our tests down to the very simplest programs, and still the problem persisted. So we called in the Engineers.

Quite quickly they pinpointed the problem in the new 'intelligent' controller. It operated using a simple question and answer protocol to and from the main processor. The sequence would typically go something like this :

```
"Hello, are you receiving me ?"
"Pardon ?"
"Hello, are you receiving me ?"
"Pardon ?"
"Hello, are you receiving me ?"
"Yes"
"I have a block of data for you"
"Pardon ?"
"I have a block of data for you"
"Pardon ?"
"I have a block of data for you"
"OK, send it down"
"Did you receive it ? Checksum 9999"
"Pardon ?"
```

But the data always did get through eventually. It was just a bit later and slower than the spec.

The unanswered question was : "I wonder how long we've been living with that fault ?"

Second thoughts   H.C.

LON15 was the building at the corner of the Upper Richmond Road and Carlton Drive; from the latter it took its unofficial name. It seems in retrospect as though the stories that ICL was trying to get out of the building began almost as soon as we had moved in; in fact, it took twenty-five years for the evacuation to be complete. But there was one earlier exodus that deserves to be remembered.

On the second floor, LON15 contained a cash office, purpose-built, secure, and well-protected. And ICT/ICL were the sole occupiers of the building, and we had our own commissionaires always on duty. (One of them had been chauffeur to Oswald Mosley before the war, and held views well to the right of Genghis Khan).

At the time we were expanding, as it seemed, into every new office building that opened in the Upper Richmond Road, and took the top three floors of number 113. Down below us there were insurance companies and lord knows who else, but there certainly weren't any security personnel. Some bright spark decided that the cash office should be moved to 113, overriding the strong protests of Miss Roe and her staff. One ought also to remember that at that time quite a few people were still paid weekly, which involved the receipt, storage and issue of surprisingly large

amounts of cash.

It was a Wednesday morning and we in IMIS were having our weekly self-education session. I ducked out of this to go to the gents on the next floor down. As I rounded the corner of the stairs there was a sudden violent kerfuffle and I saw two Securicor men fighting like mad with two others for possession of the suitcase containing the week's money. The others were dressed in suits, and my first impression was that the security guards had gone mad and were beating up two of us. But in far less time than it takes to describe it the villains had wrenched the suitcase free, dashed for the stairs and, to discourage pursuit, fired a shotgun behind them. In that bare steel and glass stairwell the explosion was immense.

They had a car waiting for them and, barging ruthlessly through the traffic, got away down Oxford Road. The worst victim was the elderly man who had been in the gents went they went in there to set up their ambush; he was duffed up and badly shaken.

Shortly afterwards, the cash office moved back to Carlton Drive - without any comment or explanation.

Another language problem   **Peter Hall**

The ICT North-West Regional Sales Manager was Roger Houbert. He became a good friend, and was a big help to all of us at West Gorton. He was also very good at his job. Roger was French and, although he had been in England for a long time, he still spoke with an accent. (*One is used by now to Frenchmen speaking English with a French accent. What was unique about Roger was that he spoke Lancashire with a French accent.*) When the position of manager of the French company fell vacant Roger was offered the job.

Roger came to say farewell, and said that he was worried about the language. His English was eccentric enough but after all this while he was not confident about his French ! What he needed, he said, was a secretary who was bi-lingual. It so happened that at that time my son had a girl-friend (19 and gorgeous) who had secretarial qualifications in English and French; she would be the girl for him, I said. I told Gillian to apply for the job, and that is how she became Roger's 'boss'.

We don't really know what it was like   1967   Alastair Moncur

During the Dubcek era of partial liberalisation in Czechoslovakia, which ended in the August 1968 invasion by Russia, managers of our customers, many of whom we had known for two years or more by then, began to open up in their dealings with us. For me it was an eye-opener about communism when the supposedly hypothetical question was put to me : "If *you* were offered the choice between being Director of Computing for the coal industry with membership of the Communist Party on the one hand, or coal face miner on the other, which would *you* choose ?"

Extra-curricular activity   c 1967   Paul Embleton

I attended a course (can't remember on what) at Bradenham or Cookham (can't remember which) at which one of the ICT lecturers (can't remember his name) had a hobby of metal detecting. Metal detectors were fairly new at the time, and we were all fairly sceptical about it. Where

ought one to start looking, for instance ? Anyway, one day he and I drove to what he called "an obviously man-made mound, probably Roman, sited to command the valley, ..." It wasn't at all obvious to me ! But he had a good line : "A Roman would have dallied with his girl on the sunny side of the hill, coins would have been dropped, and by now they will be at the foot of the hill". Cloud-cuckoo-land ! - the man is clearly barking mad! But he switched his machine on and within twenty minutes found three or four coins, totally unrecognisable because of encrusted dirt. We took the haul back to Bradenham (or Cookham), where he washed and cleaned them with a soft suede brush. One was an Edwardian half-crown, two were still unidentifiable, and the fourth - blow me down ! - was a large Roman coin worth, according to the catalogue, about £60.

On the strength of that I purchased a metal detector for myself. I became quite expert at finding silver foil and lead pipes, though coins always seemed to elude me. But I did find my wife's engagement ring which slipped off her hand while she was weeding. So whatever the course had been about, it wasn't in the end a total waste of time.

The quick wit turneth away wrath   **1967**   **Paul Embleton**

When our new 1903 machine room opened it was operated on an extended shift from 7 am to 11 pm. However, on this basis the programming team could not get enough testing time, several crucial systems were behind schedule, and I and another programming team leader complained. Management's answer was to put the two teams on night shift, where we could have all the time we needed. I acted as console operator. Unable to get my brain into gear at night for system design work, and to alleviate the tedium of working the console, I wrote a program to work out the likely results for the 12 match penny points on the football pools. Early outcomes were promising with several consecutive small wins of a few pounds, but then night shift working was stopped. I had one more refinement to make and, not being able to submit this with normal test jobs, I got our friendly ICT engineer to run it during the engineer's maintenance period. With brilliant timing, the chief programmer turned up at exactly the moment when the room was festooned with printout showing line after line of 1s, 2s, and Xs. "What's all this, then?", he asked in the best Sergeant Dixon manner. I was nonplussed; I couldn't think of anything valid to say, and was already starting to imagine the pain of getting the sack, when Frank calmly responded: "Oh that; we're testing a new form of core dump". His brilliant intervention got him a couple of pints; I thought they were very well-earned. That week I had a big win of £80, but neither the engineer nor the Shift Leaders would help any more. I'll never know if I would have made a fortune.

Eagerness and the Australian way of life   **Ray Kilroy**

In October 1967 I arrived in Singapore en route for Sydney where I was to take over ICT Australia. Wishing to make an impact I telexed the General Manager saying that I would be in the office bright and early on Monday morning. Harry Rushden, not best pleased at being replaced, no doubt got much pleasure out of telexing back : "If you are you'll be the only one. It's a public holiday".

Coming South   **Peter Hall**

In 1967 I was uprooted from my familiar surroundings - West Gorton - and transplanted to Putney to follow in Arthur Humphreys' footsteps as Director of Marketing. This enabled Arthur to get on with the important task of sorting out the future. At West Gorton I had a good friend

who impressed on me the maxim : 'never follow a good man'. How right he was. Following Arthur, and doing the job half as well as he did, was impossible.

In fact while I was made very welcome by the senior sales managers, they were obviously suspicious of this engineer from the north who knew nothing about selling. Soon after I arrived they invited me to meet them over an office drink one evening - to see what I was about, I suppose. It was a tough evening for me, but I survived. One of their number had invited me to his home in Kensington for dinner, and the evening can perhaps best be judged from the fact that in spite of his having done that drive hundreds of times, he lost his way home !

However they did persuade me to go on a Marketing course at Columbia University in the States. I think that did me a lot of good. Whether the sales managers thought so I never discovered - but I doubt it.

There's no answer to that   Peter Hall

Those of us concerned with the company's software offerings became very conscious of the fact that we had no 'real-time' operating system. We recruited a team from BEA who had developed their seat reservation system, obviously an excellent nucleus around whom we could build a project team. A project plan was put together, including an estimate of additional sales which would be won because of the availability of real-time software. Development costs would be, we estimated, one million pounds. (It was only an add-on, not a completely new operating system, and anyway everything seemed to cost very much less in those days.)

We took our proposal to Arthur Humphreys for his approval. He would get his £1 million back in three years, we said; no problem. "But", he said, "I've got my £1 million now. Why should I wait three years for it ?"

Early Days in Lily Hill   Andrew Mason

I started out as a programmer at Lily Hill House in Bracknell, when it was still a hotbed of Ferranti folk. For technology we had the original prototype Orion 2, which was installed in the ballroom of the old mansion. The ballroom itself was festooned with plaster cupids, bunches of grapes, etc, round the walls – all richly decorated with mag tape write permit rings from the operators playing hoopla. The place was a marvellous old rabbit warren, which meant that the statutory ICT tea trolley didn't have a snowflake in hell's chance of getting round. We all had to go to the canteen for our tea breaks and actually communicate with each other, much I am sure to the annoyance of management who would sooner have seen us chained to our desks.

Quirk   H.C.

I remember on my first visit being bamboozled by the oddity of the front door to Lily Hill House. It had two halves, meeting in the middle. One side, I think the one on the left, had a lever handle, which one pushed down. But it was then the *other* half which opened. It was probably a good indication of the different-ness of much that went on inside.

Working round the work-arounds   Andrew Mason

The Orion 2 prototype was an interesting machine, full of little hardware work-arounds that the

engineers had had to put in to keep it going. As a result, when it went down (not as frequently as you might think; it was a very reliable machine for its day, even though it was generally air-conditioned by the open window technique in summer), as often as not the engineer fixing it would find a work-around that someone else had applied, pull it out and generate another half dozen faults. But we liked it and were very scornful of the 1903 that eventually got moved down from Putney in around 1969. The good thing about the 1903 was that it had a lot of PCBs in common with the Orion, so our spare parts supply improved immensely with its coming.

The nomenclature urge   Andrew Mason

The programmers were as ever inventive, particularly when it came to naming their products. One in particular developed a new language for software-writing, which he called PLASYD (Programming Language for System Development). This he teamed up with another, higher-level language called PSFUL (Programming and Systems Functional Language) and then he developed an operating system for them which he named the Control And Logistics Monitor. I think it was around this time that management pulled the plug on these developments.

Sauce in Worcester   Andrew Mason

ICT management was of course always renowned for its foresight, and so it came to pass that (a) they sold our Orion to Ericsson in Sweden to act as a back up for their production Orion 2 and at the same (b) they signed a contract with the Pru for some fairly extensive developments of the Nebula software that was our raison d'etre. This led to our having to find another machine on which to do our testing, and we eventually came to an arrangement with Harold Gearing at Metal Box in Worcester –conveniently located close to Bracknell, of course – to use his Orion at night. We took it in turns to drive to Worcester after work of an evening, and then run everyone's jobs through to completion. Harold was very kind, and quite concerned that the company wouldn't pay for us to stay at a hotel after we had finished (generally about 1.00am) but expected us to drive back to Bracknell so that the output would be on desks in time for the start of the day. He therefore had a word with the ladies in the works canteen at Metal Box, and arranged for us to get supper at midnight. This turned out to be almost a caricature of canteen food – sausages, bacon, eggs, potatoes, fried bread, kidneys, the lot, in huge quantities and accompanied by brown sauce, vast mounds of bread and butter and strong tea. I'm not sure I could manage it now, but to a 21 year old it was heaven!

Our prototype of course had to be packed up and shipped to Sweden, and it was decided to give it a good overhaul first. So it was that I came into the computer room one day to find one engineer at the console, running test programs, and another sitting cross-legged on the floor in front of one of the processor cabinets tapping PCBs with a hammer. They were apparently searching for dry joints, which they were discovering in large quantities to judge from the despairing giggles emanating from them. I think they eventually gave up and shipped the machine off as it was. History does not relate whether it ever actually worked at the other end.

Campanology and other high jinks   Andrew Mason

Lily Hill had a number of interesting features, including extensive cellars and a bell tower with bell. A favourite pastime of many staff members was to bait the administrator (who still liked to be addressed by his wartime rank of Wing Commander) by ringing the bell. Once the WingCo was hot on the trail of these miscreants, a smoke cartridge would be let off in the cellars under

the main courtyard, leading to dense black clouds curling up through the cracks in the flagstones. Much harmless fun for all.

Then there was Dick Dadd, who was not only a genius programmer but also a mad kite enthusiast. He was a regular hazard to croquet players with his kite at lunchtimes – that is, when he wasn't climbing all the trees in Lily Hill Wood to measure their (not inconsiderable) heights.

That day of horror, misery and rage **Andrew Mason**

It was at Lily Hill that I first almost brought one of our great national institutions to a halt. I was employed in the Orion and Nebula Branch, and our main purpose in life was to supply and support the Nebula (which stood for Natural Electronic Business User's Language – Orion Nebula, geddit?) programming language system for the Prudential Assurance Co in High Holborn. Nebula was very advanced for its day, and was based on a very intricate database which held details of all programs and files it had ever been used on. One day we completed a major new release of the system, it passed all its acceptance tests, was copied onto the release tape and the tape was duly sent off to London. Just as it passed the point of no return, I was musing on the work I had done on it and realised to my horror that, once the new release was loaded at the Pru, the clever mods I had made to the software would inexorably destroy their entire system. Fortunately it was late in the day and they were unlikely to try the new system out till the following day. I therefore said nothing to my manager, but went home and worked all night over the kitchen table to produce a fix which would retain the integrity of the new features without screwing up the whole system. Panic is clearly an effective motivator, as I managed that night to produce my only program ever that worked first time! And I don't think the boss ever found out…..

Endangering his commission **Andrew Mason**

It was during that time that we had our Christmas lunch one year in the local Berni Inn – one of those places where you had to go into the bar after eating in order to have your coffee or tea (the general idea being for them to sell you a little something to have in the aforesaid beverage). As you may imagine, the scene in the bar was one of some confusion with programmers in festive mood mingling with the usual crowd of travelling salesmen. One of the latter got rather annoyed at having to wait in a queue of obviously none-too-sober ICT personnel while he was raring to get out on the road again. Finally he got to the head of the queue to be asked by the lady at the bar "ICT?" "No", he roared "I want bloody hot coffee".

Trouble with the ozone layer **Andrew Mason**

Another of our customers was Norwich Union Insurance. They had a spate of problems with their mag tape drives, on which the whole system depended. Drives kept dropping out, at which the engineer would be called. Standard procedure was to clean the tape heads, then check the drive, and every time the engineer would find no fault on the tape drive. This caused the customer no little annoyance, until one day the cause was accidentally found. This was during the 1960s, an era of extravagant hairstyles all held in place with copious quantities of sticky spray. The tape librarian, a fashion-conscious young lady, was in the habit of doing her hair over and over during her extensive periods of inactivity. This involved copious use of aerosol hairspray – much of whose contents got sucked up by the air conditioning and blown into the computer room, where it ended up on the tape drive heads. Of course, by the time the engineer

had cleaned the heads, the tape deck was working fine again.

Why not ?   **1968**   **Alastair Moncur**

Before their merger in 1968, both English Electric and ICT had been trying to make a sale to the same Bulgarian prospect. On hearing of the merger the prospect admitted that he preferred the English Electric hardware and the ICT 1900 software, and asked if he could now have them combined. "Yes, of course", said the salesman. Well, he would, wouldn't he ?

To Russe with print barrel   **1968**   **Alastair Moncur**

On 21st August 1968 Russia invaded Czechoslovakia. This was unfortunate - especially for the Czechs, of course - but also for Mike Jeffreys and me who had a trip planned from Putney to a customer in Russe, a town in north eastern Bulgaria. The visit was intended to show goodwill, to help the customer to correct or avoid problems with both hardware and software, and to give suitable assurances about improved future support. Once the visit was confirmed at both ends, we received a telex requesting that we should take with us a Cyrillic print barrel to replace a second Roman one which had been delivered in error.

Those who had gone before us had done so via Sofia, the Bulgarian capital, but we had decided to pioneer a route via Bucharest which, although in Romania, is geographically much closer to Russe. We were somewhat perturbed by newspaper reports that the armies of other communist countries would be brought in to show solidarity with their Russian brethren in their Czech activities, and that troops were being massed on various borders, including those of both Bulgaria and Romania. By the time of our scheduled departure the Foreign Office assured us that it should be safe to travel. This was a relief, but the packing of the print barrel, when received from Letchworth, was not. If it was not actually an ammunition box, it looked suspiciously like one.

I have only fleeting memories of the journey via Vienna. They consist mainly of :
- the weight of the ammunition box on top of our own luggage, when we carried it to and from our Bucharest hotel;
- the reddest of red tape;
- the extraordinary sight of huge and half-clad Russian women gesticulating to us from the windows of the sleeper section of the Moscow-Sofia 'express', which we joined in Bucharest station for the fifty mile journey to Russe;
- the interminable time it took the 'express' to make that short trip;
- the unashamed nosiness of our fellow travellers when our luggage was opened and emptied for customs and security clearance;
- and, finally, the incongruity of seeing a camel and a shiny new Mercedes parked side by side outside our customer's modern office block.

We did not see a single massed troop.

On arrival Mike was taken off to the computer room, while I was closeted in the office of the director of computing - or rather with him and the then mandatory Eastern European political minder. As I remember it, I had less of a rough ride than I had been expecting, and we seemed to be building up a degree of trust and understanding when, after an hour or so, the phone rang on his desk. He answered it, listened in stony silence, then put the receiver down and said to me: "That was the computer room. Mr Mon-coor, you have brought me yet another Roman print

barrel".

The Imperial Tobacco Flood   **1968**   **Giles Scott-Giles**

During the merging of ICT with English Electric, a tidal surge in the Bristol Channel caused the River Avon to rise through the street drains and flood the Bedminster district of Bristol, which included the locations of both Imperial Tobacco, an ICT site, and Players & Wills, customers of English Electric. Initially, the Imperial Tobacco management did not seem unduly dismayed, and rumour had it that they planned to replace their flooded 1902 with a more powerful system, as soon as their insurance claim was settled. Sadly, it turned out that they had no insurance against flooding, and the film of mud and algae had been slowly drying on the kit for more than a week before we, at CESO in Letchworth, were asked to advise on resuscitation of the 1902, with the inevitable question : "How long will it take ?"

Jack Finney asked me to go and have a look and to report back with recommendations as to how we might best help them. I had not been on site for more than ten minutes before I was button-holed by, I assumed, a senior member of Imperial Tobacco management who told me that my rivals, down the road at Players & Wills, had promised to have their system back in service inside three weeks and would do all the necessary work on-site. I was never very amenable to such transparent attempts to extract rash promises and so I regarded the gentleman thoughtfully for a moment and then said : "My rivals ? Oh, you mean my ICL colleagues." "Oh no, no no," he replied, "I'm not having any of that".

Later I visited my new colleagues and found that their installation was housed in a spacious well-lit computer hall with double doors giving easy access to a car parking area at the rear, where they could hose off the slime and begin the drying out. By contrast, the computer room at Imperial was cramped, had relatively poor artificial lighting, and was accessed via tortuous, narrow corridors with several changes of level. Furthermore, the false floor tiles had swelled with the wet and would not go back into place. At its height the water had been about eighteen inches above the false floor, and so the power units of all the peripherals, not to mention the lower part of the back-plane plus the core stack in the central processor, had all been submerged.

In my subsequent report I recommended that all of the kit should be removed from the site for repair, since the state of the computer room would impede the repairs to the hardware, just as the continued presence of the hardware would impede the refurbishment of the room. Most of the kit ended up at CESO HQ in 1/2 Factory, Letchworth. When we took out the core stack, the diecast alloy box enclosing it was still full of Avon water, and jelly-like algae had grown around all the wiring. However, when we dried it out, only one wire had gone open circuit, which I still think was remarkable.

Playing the Numbers Game   **c 1967**   **Paul Embleton**

Before we got our own 1900 we obtained time on the National Coal Board's machine at Doncaster, and I used to have to take batches of remote testing up there. The machine room was the biggest I ever saw. On at least one day I saw a tape operator using roller skates to move really fast between the tape decks. The console operator was a bit of a martinet, given to barking out curt instructions through a microphone : "Load tape *xyz* on deck 32; load *abc* tape on deck 44" and so on.

One day he and one of my colleagues had a loud argument about a pretty operator who, he said, was being distracted by my colleague's attentions.

On my next visit I took a number of jobs into the machine room as usual. But the console operator was preoccupied by a problem. In typical fashion he was bawling out one of his junior operators who seemed unable to load the right tapes on the right decks as instructed. It transpired that many of the labels bearing the tape deck identification numbers had been switched round. No one ever owned up to it, though we always thought there were two likely candidates !

Overheard in New Zealand - where else ?   **Graham Morris**

Documentation is like sex : when it's good it's very very good; and when it's bad at least it's still better than nothing.

Managerial judgment   **Graham Morris**

Cedric Dickens was my manager, and I think it would be fair to say that I was in considerable awe of him. So in view of all the department's commitments it took some courage before I could go into his office to ask if I could possibly take the following Friday off. He looked at me with admirable mildness and simply said : "Well, you're a much better judge of that than I am."

Who needs industrial espionage ?   **Mike Forrest**

I was in the States with Arthur Humphreys and the subject of Burroughs came up. We knew they were planning something, but we didn't know what, so we didn't know whether it would be a serious threat, and we certainly couldn't start planning how to react to it. "Well, let's give them a call", said Arthur, "and ask my friend what they're up to".

Twice bitten   **1960s**   **Dave Clarke**

The Foundation Course attendees had nearly all been through previous technology overviews, and one of them vividly remembered being fooled by the Galactic Storage Device. So nobody was going to make him believe that there was such a thing as bubble memory. Come off it ! Pull the other one ! He wasn't going to be caught twice !

Put not thy trust in horses   **1968/69**   **Paul Embleton**

I was project leader on the marine payroll application for a large company with a 1900 installation in Harlow, and one of my programmers was Jonathan, ex-public school, son of an ex-jockey who had turned into a successful stockbroker. Jonathan and I shared an interest in betting on horses; each of us had a system, and we were using them to supplement our income. Jonathan ran a syndicate of wealthy punters, and had paid runners to put bets on at the track. I had more modest ambitions.

One night, after my wife and I had gone to bed, there was a furious knocking at the door. It was Jonathan in something of a panic. He had written a letter to *Sporting Life*; the gist of it was a prediction that computers would revolutionise betting and starting prices because of their ability to correlate all known information and produce accurate forecasts of results. In response he had received a letter from Extel inviting him on the following day to discuss his 'system' with them

and offering him a job at a salary several times larger than what he was getting with us. Unfortunately Jonathan had only recently conceived the notion and had nothing to support his contention. During the next two or three hours, and over many cups of coffee, we conceived enough of a system to enable him to go and see Extel without total loss of face. Next morning my wife was quite cross because there was a ridge of fluff on our new carpet where he had paced up and down for so long.

In 1981 Dick Francis published *Twice Shy*, whose plot centres on a computer program able to predict race results by comprehensive analysis of all known information. The chief character among the goodies is called Jonathan. Coincidence ?

The Head of the River Race   **David Bell**

1968 was the year, CBINROM was the name of the subroutine, and it was all my own unaided single-handed work. It was the management of the results of the race which threw up the problem and brought forth this magnificent conversion routine, which took binary as input and generated the equivalent in Roman numerals. After all, you can't sort Roman numerals, can you ?

Maxwell - 1   **Peter Hall**

One day in 1968 my secretary came through and said that a Mr Robert Maxwell was on the phone and wanted to speak to me. This was obviously somebody's ideas of a joke, so I told her to put him on. But it was the man himself. He had a proposition to make, he said. he had a business plan which would most easily succeed if he could set up an operation with ICT and Ferranti. He had done his homework and had found out that I knew both Basil de Ferranti from ICT and his brother Sebastian, the Chairman of Ferranti Ltd. So would I please arrange a meeting between him and the Ferranti brothers. He would not tell me anything of his proposal, and I tried hard to put him off - he would be wasting his time, etc. However he was not a man to be put off and I said I would do what I could. In fact I managed to get Maxwell to come up to Edinburgh where both the Ferrantis were attending a conference. He gave the three of us a very fine dinner,

His proposition was way ahead of its time. His major business at the time was in the publishing of scientific, technical and trade journals. He believed that the future of this business lay in a computerised database interrogated by terminals connected over the telephone network. With ICL's computer expertise, Ferranti's high technology and his databases surely we would lead the world and build a very profitable business.

I was secretly rather relieved that the Ferranti brothers failed to be convinced. But should we have had a go ? Only now are such ideas really coming to fruition.

Maxwell - 2   **Peter Hall**

Many years later I found myself as one of the guests at a dinner where Sir Robert Maxwell (as he had by then become) and his wife were also guests. To my surprise he remembered our earlier meeting. I found myself sitting next to Lady Maxwell at dinner and on hearing that I was with ICL she launched into a tirade about the unreliability of the 1906A. If it wasn't the hardware out of action, then it was the operating system; in any case it never ran long enough without crashing for her to get her work done. It transpired that she was doing a research project involving textual

analysis, and using the 1906A system at Oxford University. Would I please get it fixed !

Eggstroardinary   **Richard Dean**

Barter with the Eastern European countries could be fun, but it also presented novel forms of challenge, for which the training at Moor Hall or Bradenham did not perhaps provide a totally adequate grounding. Consider the proposal to send a 1900 to Bulgaria. And consider what was being offered in return : eggs. The price was very tempting. (Remember Para Handy : "Och, it's an awfu' vexing creature, a hen. Just when eggs are fetching their best prices the hens take a tirrivie and stop laying".) The lorry was capable of taking the load. But would the combination of eggs, lorry, and a very long journey across Europe prove successful. Eventually the instruction was given that to avoid damage to the eggs the lorry must be driven extremely slowly the whole way. Consequently, the trip took ages. When the consignment was unloaded it was found, of course, that the low speed had simply prolonged the vibration well beyond what any well-intentioned egg could stand. Apart from the ones which were addled before they had started, all the rest were effectively scrambled.

The East End   **Richard Dean**

We were installing a computer installation in one of the Eastern European countries, during the time of the Communist dead hand over everything. It was going very well. The computer room was shaping up and the cabling was proceeding according to schedule. Then one day everything stopped. Nobody turned up to work. Nothing was done. Nothing. We sought out the customer's project manager (finding him was no small undertaking), and asked what was the matter. "It's simple. The budget has run out." So ICT lent them the money to finish it.

Truth, cross-my-heart truth, and the real truth   **Tim Patteson**

At the end of the 1960s I was working as one of the Systems Support staff on the sale of the 1906A to the Atlas Computer Laboratory. The new system was to be installed in a new and very plush computer suite complete with carpeted floors and wood panelled walls. The system arrived and was installed and the work of commissioning commenced. Being a Government establishment the system had to pass the CS16 trial, a stringent test devised for all Government systems. At first all went well, and the initial run-ups for the trial went without a hitch. However in the fortnight before the trial was due to commence the system started to deadstop with what the console displayed as a core store parity error. The frequency of the deadstops increased as the start of the trial grew nearer. The store was tested over and over again to no effect. It always passed with flying colours. Modules of store were swapped, to see if the fault could be traced to a particular store module, but again to no effect. The engineers were getting desperate.

Finally, late one evening, after the sixth or seventh deadstop that day, the senior engineer collapsed over the console in a gesture of defeat. The console, a Teletype 33, chattered at him, even though he had not pressed any of the keys. He repeated the gesture of collapse and the Teletype chattered again. The light was beginning to dawn. The engineers reloaded the system, and soon as it was running one of them scuffed his feet on the carpet and poked the side of the console with his finger. Immediate deadstop with a core store parity error. The culprit was at last unmasked - static - the error message being completely spurious but just triggered by the jolt from the console. The solution was to earth everything in sight with hefty lengths of copper

braiding, which resulted in the console looking like something out of a Frankenstein film.

The next day a surprised customer said it could not possibly be the carpet, since the manufacturers had lauded its superior anti-static qualities and its suitability for use in computer rooms as a result. To prove his point, the customer himself brought in a technician from the AERE at Harwell, which was on an adjacent site, to get an independent reading of the charges being carried by staff in the computer room. These were shown to be quite substantial, and the whole carpet had to be drastically treated to cure the problem.

Moral : Never believe the specs !

An Edinburgh Tale   **Charles Disbury**

When I first joined ICL, not long after its formation, I was based as a field Engineer at the Post Office's National Data Processing Centre at Craiglockhart in Edinburgh. This was an interesting time as two big changes were going on. Firstly, it seemed that all the original engineers were leaving for less demanding roles in the south. At least we assumed that they were less demanding. In addition, we were well up the steep part of an exponential curve for work load increase on the system. We went from 75 hours a week operation to 160 hours in about twelve months.

This serious increase in load meant that working parts on printers and card readers wore out at an alarming rate, particularly the pickers and feed rollers on the 40-column card readers.

Our esteemed regional manager, Andy Law, on a visit to the customer was roaming the computer room with the centre manager, J. Forbes. The two of them were standing beside the 40-column card reader, which was reading trays of cards at a nice steady 1500 cards per minute. The conversation illustrated how quickly senior managers can lose touch with the real world.

Forbes : "We have been very concerned abour the card readers recently; they seem to need constant attention."

Law : "They seem to be working OK now, Mr Forbes."

Forbes : "Yes. But we are relying on them to keep going, and we are processing a lot of cards now."

Law : "I am sure we can reassure you about that. About how many cards are you reading now, Mr Forbes ?"

Forbes : "Well, it's normally over a million now."

Law : "That doesn't sound too bad. Is that once a week or once a month, Mr Forbes ?"

Forbes (looking exasperated) : "Every day, Mr Law, every day !"

And at this point they moved on to look at something with more flashing lights.

We have a contract   **1969**   **Henk van der Vegt**

It was a worried man who came into my office, the regional service manager who was one of my direct reports at the Utrecht office of Singer Business Machines. With a shake of his head he said: "They have a box !". I looked at him in astonishment : "A what ?" "A box next to each of their Flexowriters, and in it they drop all the parts the operators break off their machines - keys, levers, switches, and so on". I looked even more surprised. The Flexowriter papertape-processing typewriter was known as a heavy duty piece of equipment. I had hundreds of them installed in my region, but this was the first time I had heard such a story.

"It's at the ZYX Company", the service manager continued. Now I began to understand. The ZYX Company was one of those subjects that we discussed at every monthly service review, when I commented about the continual losses we seemed to be making on the service contract at that account. The service manager was already complaining about the effect the account would have on his bonus.

"They've now dropped a cup of coffee into one of the Flexowriters", he said, "and the ZYX controller complained to say that he had a breakdown. So I sent Wim out to repair it, and Wim discovered that the problem was a film of sugar covering the rubber clutch roll inside the machine. He had to take the whole machine apart, clean it, and fully rebuild it again. With testing, it took him two full days."

"Well, send them a bill", I answered, "of course against the external tariff. This cannot be considered as normal use of the equipment, and only normal use is covered by the service contract."

One week later the service manager rang me. "He wants to see us", he said. "Who ?", I asked. "Mr Jones, the ZYX controller; it's about our invoice".

A couple of days later we met Mr Jones at his office. Tom, a huge guy, broad and immensely tall, showed us in and asked me "Do you want coffee ?". When I said "Yes" he opened his giant right fist, in which a plastic cup of coffee had been completely hidden. Before Tom left Mr Jones asked him : "Have you taken your pill yet, Tom ?" "No", said Tom. "Then take it now", said Mr Jones, and waited until Tom had taken a pill from a small box he carried. I wondered at Mr Jones' insistence, and asked : "Is he ill ?" "No", said Mr Jones, "but if he doesn't take his pill in the morning then after lunch he will start an unsolicited internal reconstruction of the office".

It was then that I discovered that much of the ZYX staff was recruited from the local Mental Hospital at the rate of half a guilder a day. The doctors said that having a normal job was good therapy, and the ZYX Company was willing to provide the jobs. I now started to understand the story of the boxes next to the machines.

Mr Jones started to complain about the invoice. I explained that his service contract only covered failures covered by normal use. Mr Jones disagreed : "There is nothing in the service contract which says you are not allowed to spill some coffee into the machines." I started to get upset. Was he really serious ? He looked as though he was. I said : "There's also no clause saying that you can't use the Flexowriters as an extension of your lavatories, but you can't."

Mr Jones said : "I am certain that Mr Smith, our Managing Director, will not agree". I said that I was available to explain the situation to Mr Smith as well, but Mr Jones said it would not be

necessary because Mr Smith had already told him that if Singer Business Machines insisted on payment he would cancel the contract completely.

My customer service manager looked at me with a quiet smile; would this mean that he saved his bonus ? But I told Mr Jones that in the case of cancellation the contract stipulated that the ZYX Company would have to pay compensation. Mr Jones said that he would consult his legal adviser and would come back to me in a couple of days. Which he did, and the ZYX Company paid the compensation *and* the service invoice, and returned the equipment.

On the day that happened, the service manager bought cakes for everybody in the office.

The Joining Palaver   **Robert Dimmick**

When I was about to leave university I applied to join ICL - partly because it was local to me. I lived in Fulham, which is where some of the buildings commonly referred to as 'Putney' were really located. To attend the interview I wlked about half a mile through the local park. In the course of the day I was invited to fill in a claim for travelling expenses. I did so, claiming one old halfpenny for "wear and tear on shoe leather". I got the job, but I never got the expenses. And I never worked on the Fulham side of the Thames. In mitigation, I can only point out that the date was 1st April 1969.

Chapter 7 - ICL in the 1970s

The 1904A - I knew it well   **Dick Hodge**

I suppose that we all have our favourite machines, and mine was the 1904A installed at Bridge House South. My job was to provide the internal George 3 service for the Programming Division and for Customer testing. We had persevered with smaller machines for some time and these were always overloaded, and we had been forced to restrict usage to try to maintain even a halfway reasonable response time on the terminals. When the 1904A arrived with its 192K words of memory than, at last, we had a machine that could run a real workload. We soon learned to get the best out of it.

It does not take long to learn the strengths and weaknesses of any computer, and there were two recurring problems on the 1904A. The floating point unit was two large circuit boards and these broke on occasions. It was extremely easy to prove the problem : we logged on to the JEAN mathematical language and issued the command TYPE 1. If the answer was something like 1 = .8287373473 instead of 1 = .9999999999 we simply took the teletype log to the engineers and asked them to fix it. You see, the JEAN language went into floating point for even the most trivial sums, and floating point doesn't believe in integers.

The other area for faults was in the store addressing system. The store consisted of six big blocks of real core store, each about four feet tall and eighteen inches square, and each with its own power supplies. George 3 had its own peculiar way of initial loading : it started out as a very small program and progressively allocated itself more and more memory until it had taken all the main store available. It then loaded the rest of the George 3 software, or at least as much of it as it needed to start up. As each chunk of store was allocated the current size was reported on the operator's console. One day this loader program stopped halfway. As with all good operators, we ran it again and, guess what, the same thing happened.

The messages on the console stopped just short of the magic number 32,768 and so, as I went to call out the engineers, I thought this was a pretty good clue to the cause of the problem. The engineer on duty was Mike Hancock, one of the most respected of a good team. Rather tongue in cheek I said to Mike : "Bit 15 of the store addressing bus is broken." He gave me a wry look in return and said : "I gather that you have a problem with the 1904A; I will come and investigate."

It was not long before the machine was running again. My guess had turned out to be absolutely right. Mike came over and said to me : "How on earth did you know what was wrong with it then?" It was my turn for the wry look, as I said with some hauteur : "Next time I tell you that I have a problem with the 4A, please just believe me."

It was a story that was often recalled whenever there was a debate as to whether a problem was a hardware or software issue.

The Best Laid Plans of Men (c 1970)   **Dick Hodge**

Marketing had decided that the newly acquired sites with Singer machines needed to be educated and converted onto the lower end of the 2900 range - the 2903 in particular. So a grand day was arranged at the Putney Systems Centre, and all the Singer sites were invited. Over a hundred

customers attended, and we planned to show them multi-programming on both the 1903S and the 2903. To this end we set up the two machines and about six concurrent demonstrations.

The planning was extensive. We had trialled all the demonstrations, and the place was in pristine condition. The start of the demo process was specified in minute detail. When we had all the demos running the nod would be given to the big conference area. The speaker would finish within a minute or two and announce the walk round the demonstrations. No-one was allowed to touch the computers, and *nothing* could go wrong ....

We ran up all the programs and, when everything was running just fine, we sent in our messenger and waited, with no-one allowed to touch anything. The place was filled with quiet confidence as we waited for our guests. Then out of the blue, and without any human intervention, the 2903 had a memory parity error and the yellow lamp lit on the console. For a moment we were stunned; then we leapt into a full-scale reload. The visitors, of course, arrived perfectly on cue - to see us all running around like blue-tailed flies, loading programs, mounting tapes, and whatever.

Just another typical demo!

Except that the Sales folk grabbed me and, for one of the few times that I can remember, asked me to give an impromptu presentation and *tell the truth*. I had only a few moments to prepare a speech, but managed to point out the advantages of having a machine like the 2903, which could recover so quickly from even the most devastating hardware problems. I learned a lot about making confident presentations that day.

Human Relations and the Australian way of life   **Ray Kilroy**

Following the merger of English Electric and ICT Australia, the first task was to set up the new ICL Board. Bert Lock had been appointed Chairman and I was to be Chief Executive. Casualties were inevitable, and Bert set to work. His style was to try persuasion for a couple of minutes and, if that did not work, the boot. Come the first meeting eight people turned up for seven directorships. The Chairman declared the meeting open and it at once got brutal. First item on the agenda : composition of the new Board. "I propose that the Board be composed of the following people", said the Chairman and read out the names. "Those in favour; those against; carried. Well, I'm sorry, Dan, but as you are no longer a member of this Board I'm afraid I shall have to ask you to withdraw". As a man in a daze, Sir Dan McVay reached the door and turned round to say : "I don't know what's going on". Whereupon a now safely ensconced member, Sir Alexander Fitzgerald, commented : "Dan, you may not know what's going on but I'll tell you this: you're a darned sight better informed now than you were when you came into the room."

The Three Graces
        H.C.

Very shortly after the merger between ICT and English Electric I made my first visit to LON24, the ex-English Electric building in the Euston Road, and went up in the lift to Reception. There, at the widest reception desk of my experience, were three absolutely lovely girls. As if it had been carefully planned by central casting, one was a gorgeous blonde, the next a ravishing brunette, and the third a stunning redhead. As I stepped out of the lift, one was titivating her perfect nails, another checking the style of her perfect hair, and the third reviewing in a mirror

her perfect makeup. This seemed a very great improvement on the standards we had been used to in ICT. However, right from the beginning one of the favoured expansions of 'ICL' was 'It Can't Last', and it didn't.

Close consultancy   **Peter Hall**

The non-executive Directors were, it seemed, concerned about the professionalism of the management of the company, with the result that McKinsey were called in. A team of allegedly bright young men descended on us. Early on in the process a date was made for one of these young Turks to come and give me a grilling. I don't know who was more surprised, him or me, when through the door came a chap whom I had known since he was a lad at school, and whose wedding to a close friend's daughter I had attended a little while back. We had a friendly chat !

Standard Interface   **Peter Hall**

This one is difficult to believe but absolutely true. The powers that be were concerned about the image we presented to the outside world - to callers at Putney physically, and on the telephone, and so forth. I was charged with getting some sort of survey or study done, so I hired a firm of specialists in the field, who eventually produced a report. The first page of the report consisted only of a bald statement which went something like :

"I arrived at Bridge House South for my first meeting with Mr Hall on (whatever date it was). I asked the man at the front desk if there was somewhere I could park my car. The reply was unintelligible. I repeated the question several times, and each time got the same unintelligible response. Eventually the man put his hand under his desk, retrieved a set of false teeth, put them in, and said NO !"

Consistency   **Peter Hall**

With Basil de Ferranti at lunch in Denver, Colorado. "For your first course, Sir ?" Reply : "Half a dozen oysters, please". "Thank you, Sir. And for your main course ?" Reply : "Two dozen oysters, please."

Handbagged   **Peter Hall**

Margaret Thatcher was Minister for Education. We had great hopes of selling a large number of computers to Colleges of Advanced Technology and to Polytechnics, who we could prove were under-provided compared with Universities.

She was persuaded to visit us at Bracknell where we could give her some demonstrations and, perhaps more importantly, give her a persuasive presentation. Peter Aylett was in full flight, and being *very* persuasive, when the great lady butted in, saying : "Turn over the next three flipcharts. I know exactly what they're going to say". She was rather well briefed, and we never really recovered**.**

The autocratic manner - how to cope with it   **Hugh Smith**

It became apparent that the company's relations with Her Majesty's Government were not being

coordinated particularly well, and that we might be losing opportunities as a result of not taking a coherent approach. Accordingly, General Sir Charles Richardson was appointed to advise us on Government relations, based on his long experience of public affairs, and as an early example of what was required, he set up the meeting between the management of ICL and Margaret Thatcher. Before Peter Aylett's discomfiture, Ed Mack apparently got bored and slipped out of the meeting to do something he would find more interesting.

Richardson was a master of clarity in the written word, a characteristic of the military mind at its best. Subsequent to Mrs Thatcher's visit he set out in a memo to, I think, Arthur Humphreys a programme for government relations in four short paragraphs, together with a short list of suggested contacts. This began: 'Whereas to succeed with contacts with Ministers can be highly beneficial, to fail is disastrous. This argues for careful choice of target and careful preparation for the meeting'.

Hedsor   **Peter Hall**

We started a residential course at Hedsor Park for top people - Managing Directors, Permanent Secretaries, and the like. A maximum of twelve people attended for a couple of nights, living in luxury and certainly being expensively wined and dined. The format was a structured discussion group led by a specially selected and trained man from the sales force under a senior ICL man as chairman. I was sometimes in the latter role. We had some great times and some highly amusing ones.

I usually started by getting everyone to introduce themselves, and then start the discussion going on some topical and usually relevant topic. One morning I asked the assembled company whether any of them had considered diversification - all the rage at that time. The finance director of Guinness from Ireland, when I suggested that surely they had no need to worry about diversification, said : "Oh yes we have, and what's more we've already done so. We're now in the cast iron spiral staircase business". Perhaps that is why they later had to recruit Mr Saunders.

On another occasion we had an Air Vice Marshall in the team. I got the ball rolling by asking them if they had read a vaguely relevant book. I got some lively views, but when I asked the AVM he just said : "Well, I'm not much of a one for reading myself."

There was a particularly important (to us) Permanent Secretary whom we eventually persuaded to join one of our higher powered groups. He was well known as a brilliant man and a heavy drinker and smoker. We were sort of prepared and one of our number was deputed to stay up with him after dinner for as long as he kept at it. The rest of us, including me, went to bed at about 1 am. The next morning we learned that he gave up between 3 and 4 am when he had finished a box of fifty cigarettes that he had started after dinner. When the very weary leader of the morning's discussion stood up and drew a perfectly innocent triangle on the white-board without saying a word, the Permanent Secretary immediately and aggressively said : Well, I disagree with that for a start!"

But we tamed him and got him on side, so much so that thereafter I was often summoned to his office to discuss some problem, and always he would say : "What about 6 pm or so for a gin or two ?"

Zapped   **M. Brown**

This happened a long time ago at MAN01, which is now a disused latex factory. We had all come back from the pub, and Frank Bildgerson had dropped his hearing aid down the back of an old DPZ2x-VP900 system he was working on. It was notorious that the old DPZ2x series had dodgy power supplies and tape drives. So, Frank was rooting around down the back with his long screwdriver, and he inadvertently stuck it in the power supply. He didn't have much hair, but what hair he did have ... well, let's just say you could have nailed it to the wall with him attached. Which we might well have done, except that the short circuit caused the tape drive to kick in and suck poor Frank's tie into the machine. They managed to cut him free, but his lips were never the same; so much so that we nicknamed him Mick Jagger.

Long ago and far away **Andrew Mason**

In early 1970 I transferred to Yugoslav Branch and was posted to Zagreb. At the time ICL was doing very well in Eastern Europe, mainly owing to the lack of US competition as a result of their government's Cold War posture. Well, we were doing not too badly, but it was still hard work not only selling but also installing and supporting systems in a region suffused with suspicion of Capitalists and also chronically short of convertible currency.

My first experience of this was when, not long after taking up my job in Zagreb, I sent a telex to Bracknell seeking some information, but, as it was addressed to an old friend, I prefaced it jocularly with "greetings from darkest Yugoslavia". The local boss of our agent, a man well-connected in the secret police, took massive umbrage at this clearly deliberate insult to the Socialist Federal Republic and demanded my immediate deportation. Fortunately my manager dissuaded him, but it was quite a chastening experience.

It was a marvellous place to live and work, though, with a degree of freedom that I doubt many people enjoy today. I think of it as the "Boy Scout" era of ICL, when we would think nothing of jumping into our cars with just our passports and lots of cash (no credit cards) and drive through the night to fix a fault, or perhaps just go to a party, often in another country. The financial system was primitive and it would often be weeks before we got our expenses reimbursed. The method of reimbursement was that, on the rare occasions when money had been successfully transferred from Putney, John Durham, the country manager, would drive up to Zagreb from Belgrade with thousands of pounds in his pocket in a variety of currencies – Deutschmarks, Francs, Lire, Pounds and God knows what else. We would then all foregather in someone's flat and have a grand curry party and handout, with John trying to do the reconciliation of expense accounts (all having been originally most laboriously converted into sterling to satisfy Putney bean-counters) against the sea of banknotes on the dining table while we all got happily sloshed. Ah happy days!

The spiritual life **Andrew Mason**

Memories of East Europe are inextricably linked with alcohol, copious quantities of. One got used to starting the day at 6.00 a.m. (standard starting time) with coffee and brandy. At least in Zagreb it was wine brandy (known as Konjak or Vinjak), while in other places one had to suffer Sljivovica (plum brandy) or worse. Business meetings always involved strong drink – in particular project progress meetings at our largest customer which was the local power company, Elektra Zagreb. We used to get into some fearful sessions at these meetings, but fortunately I soon discovered that their DP manager used to get silly after three brandies, whereas I could last five. I therefore used to stonewall on any contentious issues at the meetings until after the third

drink, then rush them through while hoping fervently that we could finish them before the sixth. After that we used to go off and have lunch (at 1030 a.m.). He and I are still good friends.

I once had to accompany him to the UK as translator on a GEORGE 3 management course at Hedsor. This was during the Heath government's infamous 3-day week in February 1974 and it was PERISHINGLY cold. My friend couldn't understand how this could have happened in an advanced industrial country full of coal and electricity, and even less how the English could survive without a decent hot shower every day. We managed to survive by dint of having brought very large quantities of Croatian brandy with us, which at least ensured assiduous attention from the lecturers when we were doing syndicate work!

The Clan MacCroat   **Andrew Mason**

I was taken to visit our latest customer, another power company which was located in the country about 40 miles out of Zagreb, and introduced to the finance director as the ICL support authority. "Ah, so you're English?" as he poured me the inevitable half-pint or so of brandy. "Well, yes, but really of Scottish descent" I replied. "Oh? What is your favourite whisky?" I replied with the first name that came into my head, which I think was Ballantyne's. Anyway, on our next visit he had two bottles on the table, one of the local gutrot brandy and one of Ballantyne's. The former was for my Croatian colleagues, the latter (much to their disgust) was for him and me!

Putt Promotions   **Andrew Mason**

One of the highlights of my first year in Zagreb was the Interbiro Exhibition. This was – and I believe still is – one of the biggest office and computer trade shows in Europe. In 1970 we showed off a 1902A in all its glory, although I don't remember that too much. I do remember Roger Putt, however, who was promotions manager for ICL Eastern Europe. During the evenings while Interbiro was on, we used to foregather in the bar of the Hotel International, as did a number of ladies of the night, drawn by the possibility of foreign businessmen. One in particular was quite striking-looking and drew Roger's attention. He therefore went up to the bar and in a very loud voice proceeded to enter into commercial negotiations, while she spoke sotto voce. What we could hear of the conversation thus went along the lines of:

"Hello, how much?"
…mutter…
"1500 dinars? Let me see, that's fifty quid!!"
…mutter…
"For how long?"
…mutter…
"An hour? How much do you charge for 5 minutes? I don't think I can last a whole hour".

Roger then returned to the fray a while later with the proposition (again in a voice that carried across the bar):

"Look, there's ten of us over there. Do you do a discount for groups?"

She left shortly thereafter …

Insupportable   **Andrew Mason**

One year I decided I'd gatecrash Elektra's New Year's Eve party (they weren't allowed to observe Christmas, being Communists, of course) and so turned up under the pretext of wanting

to run a compilation of a program I was working on. "Sorry, we're doing year-end runs", they said, "but would you like a drink while you're waiting?" There ensued a happy hour or two, at the end of which, to my horror, they announced that the machine was free. So there was nothing for it but to march – or rather stagger – purposefully into the computer room, where I tripped over a non-existent obstacle and the entire card pack flew out of my hands all over the floor. In order to try and put them back in order I sat down at the console, where I promptly fell asleep and awoke with my face on the console Teletype and a grinning circle of customer staff saying words to the effect of "so this is ICL Support".

Here we go Loopy-Loo   M Brown

The first two lines of code I ever wrote are for ever imprinted on my mind. They were :

```
10  PRINT "Hello!"
20  GOTO 10
```

Geoffrey Elbourne fondly remembered   Alastair Moncur

In the mid 1960s, ICT's Overseas Division was split into two, with Geoffrey Elbourne taking over the European Sales Organisation. He told me a few years later that at the time he had asked Ted White, an accountant who until then had managed Overseas Division, for any advice he might have concerning Europe, and had promptly received the reply : "I'd close it down".

Geoffrey was quite tall, portly (to put it politely), and could perhaps be described as a typical English gentleman. Without that thumbnail description, the following anecdotes would be meaningless to people who didn't know him.

Hijacking became fashionable in the late sixties and early seventies, and airport security worldwide was intensified. I will never forget the expression on Geoffrey's face - a mixture of amusement and indignation - when he told me on his arrival in Geneva that a Heathrow security inspector had positively prodded him in the stomach, not satisfied that it was real.

In 1971 he came out on a routine managerial visit to Switzerland, on that occasion to Zurich. After the day's work, we went to eat in a small self-styled nightclub, which was actually a bar with a few dining-tables and a postage stamp of a dance floor. ICL's Zurich manager, Hansjorg Dolf, brought along a very attractive girl friend, with whom I had the pleasure of a couple of dances. When Geoffrey was invited to have his turn he declined, on the alleged grounds that he didn't know any of the Swiss tunes which were being played. "You take her on the floor", said Hansjorg; "I'll tell the band leader to play English music".

That was the only time I ever saw Geoffrey, or for that matter any other manager or director of ICL Europe, dancing in public to the tune of God Save the Queen.

Bosnian Urgency   Roy Fulker

I became quite involved with a site in Yugoslavia, in deepest Bosnia. It was a steel works converting from IBM equipment to George 3.

I had made many visits to the site and had spent three months implementing George 3 and

transferring work onto the operating system. Some time later I was asked to make a three week visit in order to 'tune up' George to peak efficiency. I duly arrived and reported to the IT Director at 0630 on the first morning. After the usual formalities, which in Bosnia include a large snort of the local brandy, I insisted that I must get down to work as there was a lot for me to do.

I was told by the director that there was no rush as the machine was down and therefore I couldn't work. I asked what the problem was and I was told that the disc controller had failed (the site had only one disc controller and thus George could not be loaded). I then asked what was happening about this and was informed that the engineers were working on it but they were having some difficulty.

The conversation continued with me asking the director how long the machine had been down. I was somewhat taken aback when he said that it had been unservicable for 23 days but his next comment was 'It's really getting serious'. The machine was fixed a couple of days later after calling on support from West Gorton. Clearly there were no SLAs in those days.

Standards and standing orders   Roy Fulker

The George 3 Implementation Management course was at Beaumont. It was the one where customer managers found out how to plan and control a George 3 take-on. Everything was going fine, and the nine delegates had all participated actively in the discussion sessions. Particularly forthcoming was a Colonel responsible for one of the Army's data centres. However when we got on to standards and how they might be enforced he made no contribution at all to the debate. Thinking this rather strange I asked him the direct question: 'How do you enforce standards at your data centre, Colonel?' To which he replied: 'Simple. If somebody disobeys a standing order we put him on a charge'.

Switzerland - a pressing problem   1971   Alastair Moncur

We had serious problems with a 1901A, delivered to a privately owned company in the outskirts of Zurich. Weeks went by while our engineers, both local and specialists from the UK, failed to diagnose, or to recreate, an intermittent fault which had all the symptoms of an electrical 'spike'. We were not far from being thrown out lock, stock and barrel when what must have been serendipity pointed one of our engineers in the right direction. The owner of the company had a penthouse above the 'shop' - on the fourth floor to be precise. It turned out that the fault occurred when he went to his penthouse - the only time the fourth floor button in the lift was pressed. I never found out why he had to go there during working hours.

Foreign Policy   Roger Ellis

Arthur Humphreys and Vic Feather were having a strategic conversation. They summed up the whole of history since the Second World War as follows :

Arthur : "What do you make of this European Community business ?"

Vic : "Well, Arthur, I don't know much about it, but I know we've got to keep watching these French buggers."

What's in a name ?   Paul Embleton

ICL, in the person of Graham Mackenzie-Washington, was trying to persuade us that we ought to change to George 3, but we weren't quite ready to make the move. Then it somehow transpired that the standards for names within George 3 couldn't cope with 'Mackenzie-Washington', which was several characters too long. It doesn't now look like much of an argument, but it gave us an excuse to dig our toes in, and ICL was told to go away until they had solved this problem. Which they promptly did. They appointed a different salesman to our account, and his name was a lot shorter.

Financial customs   Graham Budd

Apropos Sandy Walker's experience (AIA 1 p57), several East European customs services became quite adept at starting to unreel tapes, and ostentatiously showing how the tape would get filthy in the dust of the floor. The trick was to get right both the size and the timing of the bribe.

Poor Little Angelinova   Andrew Mason

At the IFIP 1971 congress in Ljubljana, ICL exhibited a 1902S (I think). It was so hot in the exhibition hall that you could fry eggs on the line printer. I particularly cherish the memory of the spy from Data Products trying to get the then new high speed card reader (CR 2000 ?) to misfeed a card, culminating in his tearing the card almost in two. It went through perfectly.

IFIP '71 saw ICL staff coming from all over Europe, all of them characters and all piss artists. The dinner at the end of the conference was notable for a bravura performance by Mike Bradnick, the man who originally recruited me into Eastern European Branch. Mike was, I believe, a graduate in German, so during his National Service he was naturally posted to Russian intelligence and ended up learning fluent Russian. He had whiled away the hours with ICL in Moscow by translating English rugby songs into Russian, keeping the same scansion and meaning and, wherever possible, the same rhyming pattern, and gave a solo performance of the results standing on a table in a cellar in Ljubljana. Definitely an unforgettable experience.

Escoffier he wasnae   Tom Rothwell

There were two things well known in Manchester if you were working overnight and wanting a West Gorton canteen meal : you had to order it before 7 p.m., and you had to be close to being sectioned under the Mental Health Act before you could eat it. The canteen was run overnight by a very earthy Scottish gentleman, and in this context both 'earthy' and 'gentleman' are euphemisms. Believe me, he was real live Rab C. Nesbitt. His hat had obviously been put on in a tantrum when his boss (that brave and goodly man) told him that he had to cover his head while working in the kitchen, and the front of his apron defied description. The canteen was frequented by the lads from Multilayer, and Jimmy (No really!) was assisted by a small number of assistant Jimmys. Jimmy himself grunted; he never got round to joined-up speaking. The atmosphere could be jovial and friendly if you worked in Multilayer, were called Jimmy, or happened to like Rab C. Nesbitt; otherwise it could be tense. One did not ask for extra gravy unless one had already been sectioned.

We had some visitors, working their silk socks off overnight. Nice chaps, despite wearing suits, collars and ties, and speaking in the very reasonable and polite manner expected of Londoners. Some clown had used his initiative and ordered meals for 2 a.m. We waited for the clash of

cultures with some trepidation. Queuing for the meal was OK. Our host seemed to be in relatively good humour: if he called you 'son' it meant you might survive. But one of the more dapper visitors started badly by asking for his 'dinner'; Jimmy only served 'meals'. Then it went downhill when the visitor asked for 'bread and butter', called Jimmy 'mate', and asked for a side plate. I still have nightmares about Jimmy's expression, and the way his half of each message pair was liberally sprinkled with language that certainly wasn't Cobol. But, jings!, the feck o't went richt ower the visitor's heid.

Warmington-on-Sea ?   Peter Hall

Ken Allen and I were reminiscing about the war. I was telling him of how as a young scientist I was involved with a crazy project to lay aerial minefields in front of incoming enemy bombers. I told him that we used a special radar half way down the cliffs at Worth Matravers near Swanage. "Oh yes", he said : "I was a corporal radar operator on that station!" Small world ! Unknowingly we must have spent many happy (?) nights together struggling to get our minefield in the right place.

The LET01 carpark - Hazard 1   Len Field

There was one lady who was eventually banned from using the car park because of the amount of havoc which she caused in it. On average she managed one collision a week, but on one memorable occasion she contrived to hit three other cars in succession while doing nothing more difficult than reversing out of a space.

The LET01 carpark - Hazard 2   Len Field

Then there was the elderly gentleman whose co-ordination had begun to deteriorate. One evening when he was leaving work he reversed out of his parking space straight into the queue of other cars waiting behind him. He sorted out his problem with the driver of the vehicle he had hit, and then reversed his car smartly into the next vhicle in the queue.

The LET01 carpark - Hazard 3   Len Field

Wise drivers learned to park as far away as possible from the lady and gentleman mentioned (but not identified) in the previous two items. One exceptionally cautious and sagacious fellow always avoided the car park altogether and parked next to the wall in Pixmore Avenue. This bore a sign saying that ICL accepted no responsibility for damage to cars parked there. Which was all right, until the screws holding it rusted through, and the sign fell directly onto the car parked next to it.

Cards I like   Andrew Mason

At the IFIP International Conference and Exhibition in Ljubljana in Autumn 1971, ICL had a complete 1900 installation on show, with inter alia the latest in card readers (I can't remember the 1900 type/bar number – was it the 2101? - but it became the CR2000 on 2900). This was the 2000 cpm reader with the horizontal hopper and stacker, and a vertical upwards feed. A man from Data Products ambled over to see this competitive device, complete with his Dictaphone into which he muttered surreptitiously the whole time. We were only too happy to show off our wonderful new device, and in particular to extol its ability to deal with cards in less than perfect

condition, which he clearly didn't believe. So we showed him, using progressively more damaged cards, to his growing chagrin. Eventually he snatched up a card, screwed it up, stamped on it, tore its leading edge and then gave it to us, saying : "There! I bet it won't read THAT!" It did.

Tape I hate   Andrew Mason

On a more technical note, the first system I worked on in Yugoslavia was a 1901A installed at Inzenjerski Biro, an office supplies and business systems company that sold Olivetti Mercator accounting machines. They were using the 1901A as a bureau service to do full financial accounting for their customers, using as input the transaction records off the Mercators. These were punched into six-track paper tape – the tape had no anti-static treatment and was extremely prone to shedding dust. It also had no parity track, nor even tractor holes, as a result of which reading it was a hit and miss affair. The paper tape reader was a modified version of the 1900 high-speed one (1000 cps) and had to be specially programmed in PLAN (while the main processing suites were written in Compact COBOL – frontiers of technology!). The twit who had programmed the paper tape reader had obviously not come across the concept of input buffers, and so had it reading one character at a time – at 1000 characters per second! The result of this was that the tape reader worked in extreme start-stop mode, with the brake pads going up and down like you-know-what. It sounded like a machine-gun in operation, but, much worse than that, the constant juddering shook all the dust loose from the paper tape. The dust combined with the rubber from the brake pads going up and down, and the result was large lumps of dusty rubber (or rubbery dust) which got jammed in the tape and tore large holes in it. A nightmare to fix – I used to hate running the paper tape program, and the ICL engineers could never be found ….

Sanctions, what sanctions ?   Bill Bailey

I was alone in the sales office in Victoria House. Something made me look up from my desk. Looming over me was the biggest and blackest man I had ever seen; his very size was a threat, and the unfriendliness of his demeanour made it a very major threat. Who the heck was he ? And how on earth had he managed to get in ? And what did he want ?

He introduced himself as the High Commissioner of Uganda, and then came straight to the point: "Your company has stopped supplying cards to the Government in Kampala. The daughter of our President, Idi Amin, is due to take her final exams, but she can't do it without cards. What are you going to do about it ?"

I found myself making a quick call to the Card Works : "Please release Uganda's cards at once!"

Generosity and Gratitude   Roy Fulker

In 1972/73, I was working at Radley House with Paul Rappaport, Ian Bailey, Jim McKay et al in a department called NOSCOM. The work involved much time spent outside the office with Fridays being the only day when everybody was in - mainly to claim expenses for the other four days.

On one occasion, Paul Rappaport (now of Ultracomp) was in and went to the cash desk to claim his expenses. After doing so he came back upstairs to collect his belongings and quickly went

home.

Moments later the cash desk rang to say that he'd forgotten to pick up the money due to him. I said that I would collect the money and give it to him on the following Friday.

It just so happened that Paul had been with ICL for very nearly a year and I thought that there might be some scope here for some fun. So a jolly greetings card was purchased and all the other members of the office placed suitable messages in it.

On the following Friday Paul came in again and a presentation was made to him on the basis that he had been with ICL for a year and thus he would have to pay pension contributions. During the speech, I indicated that we traditionally had a whip-round on these occasions to ease that first month of deductions. His previous week's expenses were placed in the card.

He bought us all a drink and nearly had tears in his eyes from our gesture.

Have your passport ready, please   Gavin Kirkpatrick

In my early days as International Division Personnel Manager, soon after the reign of Ted White, getting good people to come forward as candidates for overseas postings was sometimes like getting blood out of a stone. Imagine my surprise, therefore, when I received a telephone call from a manager in UKSO which went something like this : "Mr Kirkpatrick", he opened rather formally, "I've got this chap in my area who would like to come and have a chat with you. His name is John **********. He wants to spend some time in New Zealand."

Having quickly established that 'John' did not have the specialist skills that NZ urgently needed and which would justify a two year tour, I stated that 'John' would have to be willing to emigrate before NZ would consider him. "That would be a good solution", was the manager's response, "But I don't think he's willing to emigrate. What else have you got ?"

Something started to stir in my brain about being wary of people bearing gifts, and I thought hard before answering : "He sounds just the chap for a six-month assignment in Sri Lanka". "Only six months", murmured the voice at the other end of the line, realising that he would have to welcome 'John' back on completion.

"Well, let's say six months, but renewable by mutual agreement", I replied holding my breath. "Good enough", the voice replied.

'John' was duly despatched to Colombo. It was an unmitigated disaster. He was sent back home after less than two months, and I had to gently ease him out of ICL employment.

The coming of the whirlwind   Peter Hall

The appointment of Geoff Cross as Managing Director was, to put it mildly, a severe culture shock. His appointment was announced one morning and I thought it would not be a bad idea to get those who reported directly to me in for a discussion, over a friendly drink, to try and figure out what this would mean for the company and, perhaps more importantly, what it would mean for us. So we met in my office at about 6 pm. About 7 pm in walks the new man. You can imagine what he saw : about half a dozen guys, glasses in hand, and the odd bottle on the

table.

He introduced himself, and we had quite a pleasant if somewhat nervous discussion. Perhaps not surprisingly he did not accept the offer of a drink.

Next day, however, a company announcement banned all drinking in the office.

Doing it proper   **Peter Hall**

Geoff Cross was a hard task master. Soon after his appointment we were due to give an important presentation to a very important customer at Bracknell, at 10 am, with Geoff Cross in attendance, so demonstrating to the customer that even the Managing Director was monitoring our negotiations. Geoff, quite rightly, insisted on seeing a rehearsal of our presentation, and the only time available was the evening before. He did not approve ! Unless, he said, we replaced all our scruffy overhead slides with decent professionally-made ones he would not attend ! What was more, he wanted to see a rehearsal with the new slides at 8 am the next morning before deciding on his action ! After the big build-up we had given Geoff it would have been a disaster for us if he had not appeared, so we did what he asked and all was well. Needless to say the standard of our presentations went up thereafter ! Geoff Cross had taught us a well deserved lesson.

Catastrophe   **Bob Peel**

We had a considerable number of Americans join us in the Geoff Cross era. One of these had brought two cats which duly were quarantined for six months as part of the relocation package. The very day after they were released they were unfortunately killed on the road. Nobody had told them that the traffic came from the opposite direction!

Our own Mr Magoo   **Bob Peel**

Ed Mack, the onetime head of Product Development Group, was an albino with extremely short sight and was well known for peering at you from no more than six inches away to see who you were. However I did wonder how much of this was an act, as one day standing talking to Ed on the 10th floor of BRA01, my secretary emerged from an office 20+ yards away and wiggled away from us. Ed immediately broke off the conversation and demanded to know who she was! In spite of his visual impairment Ed actually had a driving licence for one of the American States.

Utilisation of Resource - ESM, 1977   **Dave McVitie**

This classic memo from David Dace won him the award as ALL-ICL BULLSHITTER OF THE YEAR for 1977. The judge's commendation says: 'The winning entry has almost everything one can desire - deadly serious but tongue in cheek; grossly insulting but highly complimentary; PDG policy is implied. An optimist suggested that it might have been written specifically to win the Bullshitter competition. Was he right?' The Certificate of Merit confirms: 'He has earned this award through his ability to steer his way through school, politics, sport, business and the opposite sex with the agility of a true pilot. In fact he has piled it higher, deeper and further than anyone else in his field. He has also thrown it, shovelled it, shat it, and heaped it. Therefore he is hereby granted Licence number BS 00 ICU2 by the undersigned Bullshit Inspector ... who has had his number for some time.'

To: D.J.Blackwell   From: D.J.Dace
      A.P.Brock
      J.D.Comish
      C.F.French
      B.M.O'Heron
      D.E.L.Iliffe
      L.G.Sourbutts
      D.B.Stewart
      W.J.Talbot

UTILIZATION OF RESOURCE - ESM

I took the opportunity of discussing with Ed on Friday last 20th May what I consider was his lack
of availability. I said I felt that he was a prime resource that when not available caused a
complete bottleneck to the progressing of plans, the approval of designs and development
proposals. I said that unless he organised his time better and made himself more available, or
delegated some of his responsibilities for design approval, we would not be able to react in the
way that was required of us as a Group.

Ed did not agree with me. He appreciated that he was a scarce resource but felt that as a resource
he was being badly used and badly scheduled. He said that many of the reviews he had were a
waste of his time because he was repeating policy statements that had either not been
promulgated or had not been accepted by those who had to implement them or he was explaining
again design points that he had explained many times in the past due to the inability of those
present to understand, perhaps because they themselves were new or because they were not
willing to accept.

He said that in future he would not remain in any design review or meeting where he felt that his
time was being badly used. The following conditions must therefore apply to all design review
meetings at which Ed is present. They should also apply to all other formal review meetings.

1)   The subject matter must be clearly understood and have been communicated to Ed prior
        to his acceptance of the meeting.

2)   The meeting should take the form of a presentation with the presenter giving not only the
        background to the problem but giving alternative solutions and a recommendation.

3)   Ed should not be presented with problems with insufficient data to arrive at logical
        decision.

4)   There must be one senior design person present who is capable of following Ed's thought
        processes. [*A tall order !*]

5)   There must be a <u>responsible senior</u> line manager who will ensure that actions placed are
        acceptable and are implemented.

6)   One member of the meeting must assume the responsibility of getting out brief notes of
        the meeting recording any policy decisions or actions which arose as part of the meeting.
        These notes should be distributed to those present and to D.J.Dace, J.D.Comish,

D.E.Long and P.J.Gardiner. The notes should be available not later than 24 hours after the completion of the meeting.

ESM said that no technical review would be scheduled without the approval of AS&P (D.J.Dace or D.E.Long). The onus of responsibility for obtaining approval rested with Nanette Reast who has control of Ed's diary.

Ed did appreciate that he was a unique resource and he has implemented an action plan aimed at ensuring other design authorities who are acceptable to him and able to speak with his authority. These design authorities will come from senior designers within the existing organisation. Currently, these are Virgilio Pasquali, Brian Warboys, John Grogan, Norman Brown and Mahendra Patel. (This list may be added to in the future.) It is Ed's intention to have regular meetings with this group of people to ensure that their thinking is in line on our major problem areas. When he is convinced that as a Group they are adopting similar approaches to the problem he will be prepared to delegate his design authority to one or more of this Group.

On the subject of development proposals, PAs and FRs, Ed has insisted on sign off of these as the senior design authority until such time as he is prepared to delegate such authority as outlined above.

A short sharp exit   **Keith Crook**

Geoff Cross brought some excellent people into ICL, who made some dramatic changes. Many of these were Americans who, contrary to popular opinion (their own), aren't all perfect. It is said that one such person, worse the wear with drink, said something to G.R.C. which perhaps he would have been wiser not to say. When he arrived at Bracknell the following Monday his office had been stripped bare save for a desk placed in the middle of the room on which there was an air ticket to the USA. A one-way ticket.

Unexpected Astronomy   **Keith Crook**

The USSR equivalent of Harwell is at Serpukhov, just south of Moscow. Here were installed several 1900 machines. In 1972 I was invited there to instruct the scientists how to write their own Executive package for interfacing some interesting devices to do with particle technology. The computer building had been constructed in rather a hurry - which I was told was the norm for that country. When the computers were installed, the air conditioning just would not work. Everyone blamed everyone else, and the problem was only solved by chance, when an ICL engineer went up into the void space above the computer room at night and realised that he could see the stars. Seemingly the amount of cement that actually connected two blocks was a bit random. The total area of unfilled gaps amounted to many square feet. The air was just leaving the building willy-nilly, and it was quite impossible to maintain a positive pressure. At least that was one thing that ICL could not be blamed for !

The automated paper shredder   **c 1972**   **Dave McCaddon**

The first ICL computer I was ever involved with was a 1902A, manual Executive, 32K memory, 8 magnetic tape decks, no disks (what would you want them for?), 2 card readers, 2 line printers, and a beast in the corner known as a document reader. I remember this device came under the heading of 'exotic peripherals'. There was nothing exotic about this machine if by 'exotic' you

imply something desirable. It had its covers off more times than Samantha Fox; does that qualify as 'exotic'? It was an engineer's nightmare, and its operation reminded me of that garden fête attraction where you have to pass a piece of wire with a hoop on it along another twisty bit of wire all the way from left to right without ringing the bell. It supposedly worked by automatic character recognition, and we had to process time-sheets on it. These were A4 paper forms on which clerical staff had ticked the appropriate boxes. When I fill in my lottery ticket nowadays, it still occasionally brings a memory shudder.

A case of over retrieval **Dave McCaddon**

As a shift-leader at a customer site running a large 1904A under George 3 I was always looking for ways to speed up the overnight processing runs, even though most of the work finished early in the morning. I came up with the idea that what George 3 really needed was a pre-processor which could analyse the job control macros prior to running the actual jobs. I sat down and wrote a program which looked through the night's workload and issued retrieval commands for the off-line filestore. It ran wonderfully, or so I thought, and soon we were loading tapes like there was no tomorrow. We finished way ahead of schedule, and the following night I was called in front of the operations management, and received a tremendous rollicking for interfering with the workload. Shortly after that I was promoted to the support team, and away from the computer room. I think there's a moral in there somewhere.

Held together by glue **David Stafford**

The State Government of Victoria, in the days when it had some money, also had a 1905E, and a brilliant but clumsy engineer. This anonymous engineer, called Stuart McIvor, dropped a tray of ferrite core during maintenance. Most of the cores shattered, and a worldwide trawl for spares - including West Gorton - could not locate anything like enough. The IT Director, who actually spent most of his time running a tourist train called Puffing Billy, believed no-one when he was told that his machine would be unavailable for four weeks. Despite best advice, mockery, cynicism and incredulity, he stuck the many fragments together with Araldite to recreate the ferrite cores. When the replacements eventually arrived, his handiwork was lovingly removed, and ended its days in the museum at West Gorton.

The water ban **Andrew Mason**

Another of our customers in Yugoslavia was the Radoje Dakic tractor factory in Titograd, which is in Montenegro very close to the Albanian border. They made an art form of alcohol. On my only visit to them we had to take the 0545 plane from Belgrade, which got us to the factory at about 0630, there to be greeted by the DP manager and a tray of coffees. He reached behind him into a cupboard containing about two dozen bottles, selected one, threw away its cap and said "would you like coffee or juice…..with your brandy?" My Serbian colleague, who as it happened had been up drinking till 3.00 am, went very pale and in a feeble voice said he'd just like some mineral water. "Sorry, not possible" said the DPM. "Why ever not?" asked Brale, mineral water being extremely cheap and universally available in offices. "The Workers' Council have decided it's an unnecessary luxury" said the man with two dozen full bottles of brandy in his cupboard. Later in the day we were taken to lunch when they finished work for the day at 2.00 pm. Lunch was excellent but extremely alcoholic, and was followed by a "few beers" in a pub in town, following which we were taken to the airport for the return flight. Our host insisted on going to check us in for the flight, and returned wreathed in smiles. "Great news! Your plane's delayed

for an hour; we've got time for a few quick drinks….." One visit was enough to Radoje Dakic.

The main application that Radoje Dakic had bought their 1900 for was production control (using the PROMPT package) and under the contract they had a visit from an ICL production control specialist from the UK every six months. This poor man used to get very frustrated that each time he visited they didn't seem to have made any progress, until one day it was explained to him: "You see, Mr so-and-so, this is Montenegro. Not only are we very stupid, we're also extremely lazy".

What Milosevic might do next   Andrew Mason

One of the more memorable characters in E. European Branch was John Stansfield, a brilliant man who had had a lot to do with the original Algol compiler. He worked as a lecturer, mainly in FORTRAN (a language he regarded as somewhat beneath him), and on one occasion was giving a course in Sofia. One of the students came up to him and said that he'd been trying to develop a program in FORTRAN but was having difficulty. No problem, said John, bring it to me this afternoon and we'll have a look. Apparently, if one knows one's physics, it's very easy to pick out the central algorithm in a program for designing a nuclear bomb, which John did and pointed out same to his student. The student gathered up his printouts, left the room, and John was deported the following morning.

Getting cross about it   Peter Hall

We were having great difficulty getting the Inland Revenue to accept a Project Plan which required the delivery of a 1906A at a date that would suit us. We needed an early date if we were to meet our revenue forecasts. I took Geoff Cross to meet the elderly, solid gentlemen of the Board of the Inland Revenue. They explained in painful detail why it was impossible to meet the timescales we proposed. Geoff became impatient, and blurted out that where he had recently been working in the USA they had put a man on the moon in less time than they were proposing for their developing their tax system. You cannot conceive the look of horror on their faces ! I rescued the situation by explaining to Geoff that he did not understand - putting a man on the moon was a much easier job. All ended well : we got our way.

The Milk Round - second round   Gavin Kirkpatrick

'Second Round' interviews were conducted during Open Days at Putney and, to enable top management to participate and get a feel for this year's vintage, we organised a duty rota for their benefit. Interviews were scheduled to last up to 45 minutes, and each interviewer was required to summarise his views and recommendations on a simple pro-forma. We personnel people tried to introduce an element of entertainment to lighten the load for the bigwigs, and it was arranged for Ken Allen to spend 45 minutes with a particularly gorgeous and spectacularly leggy Cambridge undergraduate.

At the end of the day we collected up all the interview summaries. Ken's comments were brief and to the point : "Wow! Recruit! No further discussion needed!!"

Relative Urgency, c 1973   Martin Wright

The project to put large fixed discs onto the DSS's Unemployment benefit installation at Reading

was not going quite perfectly. A senior civil servant (of such Glaswegian origin that one needed an interpreter as soon as he got excited) was rapidly reaching orbital velocity, and demanded the presence of senior ICL management on site without delay. Such an invitation could not be refused, so Peter Seward and Steve Kerss promised to attend forthwith. Circumstances being what they were, they were a little late leaving Computer House (LON24), and arrived at Queen's Road, Reading, some time after 5 pm. I met them in reception and we all proceeded upward in the lift. They pressed the button for the third floor (management), while I got out at the second (home of the ICL hideout). Shortly after I reached my desk, the two ICL managers reappeared, and exclaimed with astonishment : "There's nobody up there !" The relative importance for the Civil Service of project panics and knocking-off time was never better illustrated. The subsequent project review meeting was much more amiable and effective with the customer absent.

Wheel the next one in c. 1973   Dave McCaddon

Working nights as a shift-leader in computer operations at a customer site had its benefits - apart from the generous shift allowance. An operator on my shift had bought a new car - a G-reg Mini - and wanted a radio fitting. 'Bring it in tomorrow night', I said. 'We should have time after the work has finished.' All part of good team-building, you understand. We did indeed finish the work early on the 1904A and retired to the operators' rest room conveniently situated at the end of the computer suite just next to the car park. That night a hard frost had set in, and it was really bitter in the open. We agreed that it was far too cold to fit the radio outside, so we opened the double doors of the rest room, removed all the furniture, and carefully drove the Mini inside. It was a tight fit, but we just managed to get it in and close the doors. We set about fitting the radio, and finished it successfully about 8 a.m. 'Quick!', I said, 'Let's get it out of here before the ops management arrive', and that's when the trouble started. Amazingly, the wing mirrors wouldn't go back they way they had come in. It got to 8.20 and the Mini was still inside the room. We decided that we would have to take the mirrors off. We hurriedly unscrewed them and reversed the car out, like a scene from *'The Italian Job'*. Just then the ops manager arrived. 'What are those tyre marks?' he asked. We slunk off to bed and left it to the day shift to explain.

Welcome to George c. 1973   Dave McCaddon

We had been operating the 1902A at the British Steel Corporation under manual Executive, and the day had come when ICL were going to deliver George 1 and 2 for evaluation and give us a big presentation on site. Several of us were sitting in the operators' rest room discussing the plan when Peggy the tea lady arrived with the trolley. 'Busy today?' she asked. 'Yes, it's a big day; we're waiting for George.' Amazingly, she left another coffee with us.

A Case of Mistaken Identity   Dave McCaddon

I was due to attend an exhibition to load some demo software on a machine temporarily installed in a hotel conference room. As I was locking my car I saw another engineer getting his tool case out of the car next to mine. His face seemed familiar and he nodded to me. We walked across the car park together, and the conversation went along these lines :
    'Had any trouble with the equipment?', I asked.
    'No', he replied, 'No bother, though the stairs were a bit difficult.'
    'Power OK?'
    'Yes. We've had to borrow an extension lead, but it's OK.'

'So we're all ready then?'

'Yes. I'll show you the way', he replied.

At the top of the stairs I could see my other colleagues through the door on the left and started to go that way. 'No', he said, 'We're in this room on the right'. At that point we both realised our mistake. He was attending a dental equipment exhibition in the next conference room, and we had never met before.

More nightshift confessions, c 1973   Dave McCaddon

I was working as an operator at a customer site; no need to identify them, let the poor souls rest in peace. We used to process the clock cards every Friday night. It was a simple job for the 1902A, which basically involved keying-in the week-ending date, normally for about three weeks ahead. Then the printer was set going to print the thousands of cards, each with the employee's clock number and name and the new date.

This we did that night all as usual, kicked the printer into action, and retired to the rest room for the important details of coffee and discussion on what the weekend had in store. After a couple of hours, and when several boxes of cards had been printed, our shift-leader, dutiful lad he was, checked the ribbon and so on, and to his horror discovered that we (it was a royal 'we' even though only one person had typed the parameter) had keyed in last year's date.

We restarted the run and removed the evidence, and our mothers enjoyed useful shopping-list cards for the next many years.

COlloquial Balkan-Oriented Language   Andrew Mason

Operating in other languages was always potentially fraught. We were taught, of course, that one of the beauties of COBOL was that, as it used English words, programs written in it were almost self-documenting. Well, it didn't work if one was helping to debug a program with all the identifiers written in Serbo-Croatian! And the Yugoslavs found that the WRITE verb was less than meaningful when they don't even have the letter W in their alphabet.

Another trap was pronouncing the names of programs. I particularly remember the hilarity when I asked someone to load the program #XJEB, using the Serbo-Croatian pronunciation, which had the same effect as asking an English operator to load #XFUK……

Complaint chasing   Andrew Mason

Another most noticeable type was Ron Smith, an ex-Elliotts engineer who by 1973 was support manager for the whole of Eastern Europe. He was a real rough diamond but extremely sharp and indefatigable. Based in Putney, Ron would do tours of the "patch", taking in two East European countries in a week and leaving a trail of exhausted local ICL staff behind him from his habit of working from 6.00 am to 6.00 pm and then carousing till 3.00 am. (He ended up working for Brian O'Heron as programme manager for the New Range P3, with no direct authority but being held fully responsible for its completion on time. His ability to get his way in meetings was legendary, and people used to go out of their way to try and thwart him, but they never did).

On one occasion, Ron was called in to a particularly sticky meeting at a customer in Czechoslovakia. The customer was NOT happy, as often occurred, although this may have had

little to do with ICL's actions, as also often occurred. Anyway, the meeting was attended by the general director of the customer, who sat with obviously mounting annoyance while the argument raged across the table. He suddenly took off his glasses, slammed his papers down on the table and announced : "This is entirely unsatisfactory. Mr Smith, you will come with me". So Ron followed him out, down the corridor and into a small room where he produced a bottle of brandy and said "God, that was boring! How about a drink?" So they proceeded to have a couple of large ones while reminiscing about the war, and then returned to the meeting, where the director announced : "So, it is settled. We will continue". This happened throughout the rest of the day, and I believe the director got the better (in an alcoholic sense) even of Ron, but the customer complaint was settled!

Omnipotence

When the 2980 was designed, there was at one stage a suggestion that its system node should be known as the General Origin of Data.

The great 2900 launch - an afterthought   **HC**

One of the models used in the launch videos, in fact the pretty dark-haired one at the left hand edge of the illustration on the cover of this book, had gone on to other things after her stint of filming for ICL. Thus it was entirely coincidental that during the week of the launch her shapely form was also seen on evening television, modelling underwear.

Timing   **Richard Dowdeswell**

W.H. Smith boldly took the first ever commercial 2900. (Not perhaps the wisest decision they ever made). The problems were horrendous and went on and on, to the mounting dismay of account manager Peter Smith and project manager John Polatch. At last, after some months, a COBOL program actually compiled ! This was such a hugely significant advance that they all went straight off down the pub and got pissed. So Geoff Cross did not get the answer he expected when he chose that afternoon to ring up for a progress report.

The Plague of Egypt   **1974**   **Jerry Montgomery**

I joined International Division (ID) in 1974. The day I joined I was introduced to the Divisional Director Chris Wilson, who told me of a problem in Egypt with a 1906 computer which had been undergoing commissioning unsuccessfully for some six months or so. He asked me if I could have it up and running in 30 days. With the confidence of youth I replied that with the right resources that could surely be achieved. I immediately went to Egypt for the 30 days and within 3 days I was back in Putney in front of Chris. He was sitting down, and at once asked me what the major cause of the delay was. I (with not too much tact) informed Chris that he was - he himself. Well, he rose up out of his chair like a rocket, glaring down at me and turning more than a bit red. Through clenched teeth he let me know that if I was wrong and couldn't explain that last statement then my employment in ID wasn't going to last very much longer than 30 days. I simply went on to explain that he had written to Shipping Control and directed them not to ship any equipment to any ID territory until the total value of items to be shipped was in excess of £1000 sterling. Shipping Control was sitting on over £800 worth of critical spare parts needed in the commissioning of the system. (The system went live on the 29th day).

The Land of the Pharoahs   **1974**   **Jerry Montgomery**

In the same Egypt assignment the project was faced with some unusual challenges. The tape drives were lasting about 3 days and we kept needing new heads. The computer operators were for ever letting magnetic tapes drag on the floor and as the site was on the edge of the desert the floor was always sandy. Because we couldn't get any tacky mats the hallway was lined with hessian bags and the guards were ordered to sprinkle them with water every 30 minutes to pick up the sand being tracked in on people's shoes. The main problem however, was the rats which were eating the delicious ILC cables. Before I flew off to London on the first return trip I had advised the customer to put wire screens on all of the access holes and to put rat bait down. On my return from London, a couple of days later, I noticed that the rat bait was nowhere to be seen. In the joint Project meeting I questioned this and was informed by the smiling customer that they had caught THE rat. I, and the company, were saved from embarrassment, as for a change, I was completely speechless.

Sweet and sour   **Peter Hall**

I had an office next door to Geoff Cross. A few days before Christmas one year he was in my office bright and early giving me a right going over: sales were down, expenses were up, etc etc, giving him every opportunity to give me a very uncomfortable grilling. It was all very unpleasant.

Later that morning he came into my office again, this time all sweetness and light ! What ploy is this ? I wondered. But I was wrong to have suspicious thoughts. Bonny, his lovely wife, had brought the kids in to be looked after while she went Christmas shopping. "Come next door and help me keep them amused, please!" So we had nearly two hours playing on the floor with the Managing Director's lovely children. I suppose I should have insisted on applying myself to putting right all those ghastly things their father had unearthed in my performance earlier that morning.

Sheer Piracy   **H.C.**

During the Geoff Cross era I was in an office close to the LON15 Cash Office, and as a result was co-opted as a signatory of company cheques. On the whole this was a fairly boring and humdrum extra duty. However, some of the American imports quickly became notorious for what we could now call Arkansas morality. 'Getting their trousers off in Olympic time' is another way of putting it. It seemed as though ICL was just there to be ripped off for their benefit. Some of the cheques that resulted were astonishing, but the one that finally got my goat was a cheque for over £4000 for a fur coat - a peace offering to the American's wife whose husband had cheated on her too often and too flagrantly.

Company Cars - 1

There are many tales of company cars. We all remember the legendary reliability of the Rover 2300, and how it would refuse to start for at least thirty minutes if it stalled in the first five minutes of the day. That was not all. John Davison took delivery of a new Rover which was left for him in the Slough multi-storey car park, behind SLH01. As he drove out down the ramp, the steering wheel came off in his hands !

Company Cars - 2

Roger Wood, who was at the time (I think) Marketing Director of ICL (UK), visited Sainsbury's, a most important customer. He arrived in their car park, only to find that the central locking system had locked him in, and would not unlock. Being resourceful, Roger eventually managed to climb out through the boot.

Company Cars - 3

For a period of time I had a Rover 2600 which had previously been owned by Don Beattie. (Not that I mean to imply that this incident necessarily had anything to do with the way he had treated it.) One weekend I took a group of hockey players to Beckenham. When we arrived and had removed our kit, I reclosed the boot and, as I did so, one of the tailgate hinges broke. With some jiggling to overcome the pressure in the gas struts, I eventually got it closed. Needless to say, after the match we had to return our kit to the car. As I attempted to close the tailgate, the other hinge also broke. The AA, bless them, sent the Relay lorry within the hour, but the driver said that he could not take me back as the wind pressure would lift off the tailgate. When I suggest that the car should be reversed on, he changed his mind ! All were safely delivered home, and the following day I slowly drove the car to the garage. When I explained to reception what had happened, their look said, more plainly than any spoken words, "Oh no, not another one !"

Shorn   **Gavin Kirkpatrick**

Geoff Cross didn't like wasting time having his greying hair cut, and sometimes it grew longer than was altogether fitting for a Managing Director of ICL. One day, after having at last had his hair cut - and cut exceptionally short - Geoff went to a meeting of senior WMG management, in which the southerner Bob Bracewell was a participant.

"Jeeze ! Geoff!", was Bob's drawled greeting, "You look like a London taxicab with both doors open!"

Those cunningly concealed Canucks   **Ray Kilroy**

In about 1975 I needed to get some information from Consolidated Computers, the manufacturers of Key Edit. I sent a telex to Ottawa. No reply. I sent another one, but still no reply. I mentioned it to Peter Simpson, who suggested that I send it to Don Mills. I duly sent a third telex marked for the attention of Don Mills. Still no reply, but by now I no longer needed the information.

Some years later I was in Ontario and found myself in a place called Don Mills. Yes, Consolidated Computers did have an establishment there.

Stress & Tension Syndrome   **Keith Crook**

In the early 1970s a support operation was set up called Sales and Technical Support. This was staffed by fairly aggressive people whose job was to get things done. I was managing the 7903 development programme and, facing a problem in Australia, I was bombarded by one person from S&TS to send my main software engineer out there withough delay. Apart from the fact

that there was at least a one month delay for injections, it was a totally impractical suggestion. We sat at opposite ends of a long table in Stevenage and argued very loudly for about an hour. Eventually we agreed on a method of working, and the problem was solved by dint of a bit of late night working and a number of telephone calls to Oz. I assumed that I was not on his Christmas card list. When Stevenage closed in 1975 I was very close to leaving ICL when he rang me and offered me a post in S&TS. "What ! After that flaming row we had ?" said I. "That's precisely why I want you to work for me", said he.

Coleoptery   Graham Budd

At British Rail in Nottingham an early 2980 arithmetic unit developed a bug that became known as the slipping decimal point, because the point would appear at the wrong position in a number that was otherwise correct. This was embarrassing, so a high-powered team appeared from West Gorton, some intensive and brilliant diagnosis followed, and a cure was effected.

A week later the bug reappeared. I was looking at some printed output, and there was clearly a decimal point where it didn't ought to have been. I looked closer, whereupon the bug, recovering from being dazed by its circuit round the chain printer, got up and staggered slowly away.

The washing machine does it   Chris Walker

We had a 1904 at Tyne & Wear Council which was giving superb service - all the units were well settled in, there were no maintenance hassles, and we had a stable set of applications. But technologically it was at the end of its life, and we could tell that things were going to start getting more expensive, and spares would be more difficult to obtain, and so on. The obvious thing was to replace it with a suitable 2900. But how could one justify such a move to the councillors ? We would, after all, be spending the best part of a million pounds just to continue running the applications which we already had.

As any council officer would tell you, we try in such a case to prime the principal councillors in advance, so that they already have the full story by the time the matter comes up on the council agenda. I'd done all that, but I was still expecting to have a very sticky time of it. However, when the point came up for discussion it was preempted by a councillor whom I hadn't previously considered, a fairly elderly lady sitting at the far end of the room. "Oh I know just what you mean", she said; "I've had a washing machine for eleven years - a lovely machine - it's never gone wrong - it's been a good friend to me. But last week it did get a fault, so I called the man round, and he said there was nothing he could do about it, the spares were almost impossible to get, and in any case they would be far too expensive. So I'm having to get a new one". The 2900 went through on the nod.

Concern for the environment   1975   Jerry Montgomery

I was actioned by ID in Putney to look into a complaint that had been received from a Singaporean customer. He was experiencing very frequent system outages. His complaint advised ICL that their product literature had falsely described the equipment purchased, and it was pretty clear that he was not far short of calling for his solicitor. ICL in their wisdom had put in the literature the simple statement that the ICL 2903 system would work in an office environment. The Singapore customer was located in the docks area and his offices had their window open with no air conditioning, so the environment that his office staff worked in was

usually about 95 percent humidity in 98 degrees of temperature. The customer's staff were very thankful as ICL bit the bullet and installed a window air conditioner in the office.

The Virtual Power Supply   1975   Jerry Montgomery

In my time in International Division I was sent out to many and various world-wide territories to review problems and put actions in place to rectify them. I recall on one occasion being sent to the Far East and being told to find out why a customer had had an ICL computer for many months and had still not paid anything for it. Before I left Putney I could find no technical Red Alert, nor any outstanding spares or equipment orders, nor any letters of complaint. What I found in Kuala Lumpur was that the customer was a logging company and that in the location where the computer was they did not have any electricity. The salesman that sold that system was a salesman's salesman.

The water-cooled P4   Brian Russell

The power supply on the first prototype 'P4' ('4001' - A Space Oddity, according to the label over the Engineer's Lights) was a cannibalised 1906A PSU. This PSU was some 2 feet wide, 6 feet high and 20 feet long. Originally rated at 5 Volt 1500 Amps, it had been upgraded by twisting the current limit to supply 1750 Amps when the Fast Multiply/Divide unit was added to the P4. It habitually ran a bit warm, but coped adequately for development. The power supply was water-cooled; that is, it had a closed water circuit which carried the heat away from the power electronics and a heat exchanger where a fan blew air up through the finned radiator pipes.

One morning I arrived with my test programs for running on the machine only to find that water was dripping out of the power supply. Dave Eglin, hardware manager for the P4 project, thought that the leak could be repaired without switching off. It was quite obvious which section of the PSU the leak was coming from. This section had, at about chest height, a panel about 18 inches high and four feet wide. This panel was gasketed and bolted down every 4 inches around its periphery to provide an airtight seal. Someone was busy undoing all the bolts with a spanner. I just stood and watched - I wasn't going to touch the machine. No-one thought to consider why the panel needed to be airtight. All became clear when the panel came away to reveal a 2 foot diameter fan, rotating at high speed. Above it were the pipes of the cooling radiator, which were leaking. The fan threw the water all over the place.

At that point the machine was switched off.

For days we had the floor up, and men with mops were down among the mains distribution circuits. That whole area of the R & D hall was out of action for a long time, but it was eventually dried out and brought back into service.

Interestingly, the underfloor area was divided into sections by walls about 9 inches high. Whether this was good planning, or purely fortuitous, I don't know. But it did allow us to distinguish dry areas from wet ones.

Colour scheme   Philip Sugden

The 2900's memorable "Hot Tango" colour could only be achieved by a three-stage painting process followed by baking in an oven. It was impossible to match it by any other process.

Squelch   **Brian Cook**

We were coming to the end of our standard grand 2900 overview presentation, which had been going very well to an audience of the directors of an important customer. They were all serious men, with the dignity that comes with late middle age, but they were accompanied by their IT manager who was a different kettle of fish altogether - young, brash, impudent, cocky, in short a real pillock. Richard Dean was in full flow in the final session of the day, and Richard in full flow is a sight to savour and enjoy. Suddenly the upstart interjected : "Have you ever thought of standing for Parliament ?" It didn't faze Richard one bit. He allowed a long silent pause for effect - and Richard in pause mode can be thoroughly awe-inspiring - and then replied : "Well, yes, I have actually. But the pay's a lot worse than I'm getting here, and here I have to deal - usually - with much more interesting questions." At which all the silly boy's directors clapped their hands.

Public Relations Backfire   **c. 1975**   **Philip Sugden**

In the seventies I was a member of the Retail and Distribution sales team. One of our customers was Courage Breweries who had interests in wines and spirits as well as in brewing. A product presentation and demonstration was arranged for Courage at the Putney Demonstration Centre in Bridge House South. In those days it was common practice to offer guests a wide choice of alcoholic drinks on such occasions. We went to a lot of trouble to ensure that all the drinks were Courage or Courage associated products. This did not go unnoticed and there was a certain amount of good natured banter along the lines of 'See that you have got in our products especially for us'. Assurances were given that this was the standard offering and we got on with the business of the day. The presentations went well, the demonstrations went well and lunch went well. The final afternoon session was going well until a member of the catering staff came to get us to sign for lunch and the drinks. As she was about to go out she stopped and said : "By the way, you will have to take that lot, (i.e. the unfinished drinks) away with you as we don't use those here". In a sentence all the good of the day was undone. Copious quantities of the unfinished drinks were needed before the customer began to see the funny side.

The old order changeth   **Martin Taylor**

I worked from 1972 to 1975 in Software Distribution Department in Friar Street, Reading, later called UK SLDC ("Software & Literature Distribution Centre" or "Slow, Late, Disorganised and Chaotic" according to taste). When I joined it was still being run by Herbie Gerstl; I remember he commuted from Borehamwood to Reading each day, which seemed an extraordinarily long way. He was eventually replace by Sandy ... Sandy .... dammit, can't remember his surname. Nice chap; came from Dalkeith, I think.

My immediate boss for most of that time was another very nice chap called Mike Schurer. Then the names of Bob Kenyon, Barry Smith, Glyn and Angie Way also come to mind. We had a good crowd of young people there, including a Trotskyist, and a girl who was in the habit of sitting on her desk in very loose-fitting clothing - which was a lovely distraction from work. I'd better not name them; they're probably quite respectable by now.

We made use of the Dataskil computer room in Cardiff Road, Reading, full of wondrously ancient 1900 equipment - a 1903 (no suffix) comes to mind, 4 x EDS8 (2 DRICO and 2 CDC, for variety), 4 decks of 7-track mag tape, paper tape reader and punch, ditto cards, and a paper

tape multiprogramming Exec. I'm not the person to describe the horrors of reloading Exec - there are great tranches of ancient vocabulary that are better left undisturbed and, anyway, my present blood pressure wouldn't stand it.

Anyway, it so befell that we came under the command of Mike Forrest as part of SPD Bracknell and so, not surprisingly, there came a decree that we to stop using the above antiquated kit - which in fact was very suitable for our purposes - in favour of remote use of the George 3 service at Bracknell.

Some of us felt quite strongly that this was a wrong decision and I, (being a snotty young man with too high an opinion of his own abilities), took it into my head to lapse into poetry on the subject. What was *really* unwise was that I LISTFILE-d the poem to print on one or more of the printers in the Bracknell machine hall. I think I was fortunate, (and I'm grateful to Mike and Sandy), that I didn't get into more trouble for this.

The poem was a parody of "*Good King Wenceslas*", and I can't remember all of it, but what I do remember went something like :

> Good King Michael F looked out
> From his padded cell-o;
> Salivating round about
> And munching on a Jell-o
>
> long gap; then last verse :
>
> Stop your whining, Sandy-boy,
> Do not make me nervous.
> Put your blasted system on
> To our George 3 Service.
> Gaily put he down the phone;
> Now his face looked happy,
> Rather like a child whose Mum
> Has just changed his nappy.

Juvenile, I agree. Probably libellous to at least one of the people referred to - I grant you. But oh how it reflected the grave sense of injustice I felt at the time. Ah, Youth !

The Plessey Disasters - 1

The Plessey project was a wonderful place to learn about all the many things that can go wrong on a customer site. The Plessey Computer Centre was located in Addlestone, through which flows the River Wey. Following a particularly heavy rainfall, the river flooded, and there was a problem on the site. We spent hours lifting junction boxes under the floor as the water level crept inexorably higher, despite our unbroken perimeter wall of sandbags. As someone found out later, there was a drain in the middle of the plant room. It had never in its life had a drop of water to dispose of, but it was a marvellous way of importing a flood into the computer room. With the aid of the Fire Brigade, the water eventually subsided.

The Plessey Disasters - 2   **Pat Reid**

The Project Team had been working hard to persuade Plessey of the need for a disaster standby plan and, prodded by their insurers, they eventually agreed. They even carried out a rehearsal, but somewhat half-heartedly, because of course there would never be a need to execute the plan in anger .....

About three weeks later, on a Sunday morning, when the computer room (containing a 1906S and a 1903T) was empty, but there was a cleaner in the office outside, the false roof of the computer room fell down on top of all the equipment. The emergency standby plan was invoked, and within twenty-four hours a standby service was being supplied on the night shift of the 1906S in the BRA01 computer hall, supplemented by a 1904S at FEL01. This lasted for about six weeks, before the room at Addlestone had been rebuilt and the machines had been cleaned and retested. Then the workload could be moved back.

The Plessey Disasters - 3   Pat Reid

While processing the Plessey workload, which contained some heavy scientific stuff, a number of faults were found in the Floating Point microcode of the 1906S at Addlestone. These were duly corrected by West Gorton, usually fairly quickly.

When the forced move to BRA01 took place, there was some surprise that the same faults recurred. On investigation it transpired that all modifications to the 1906S had been forbidden by one Mike Forrest, so that the ICL 1906S was about six months behind the Plessey machine in build level.

The other problem with the 1906S at BRA01 was that the large number of tape decks suffered from a problem known as 'stiction', whereby the tapes stuck on the heads. With much of the Plessey load relying heavily on tapes, a whole separate exercise had to be undertaken to bring the tapes up to scratch.

Starting in the Gulf   Andrew Mason

After Yugoslavia came the Gulf. One of my tasks was to arrange agency contracts in Dubai and Abu Dhabi. The man we ended up with in Abu Dhabi looked the epitome of an Arab trader and certainly had some endearing ways, even if he was in some ways an old rogue. He claimed not to speak any English, and one day I was in his office complaining to his staff about the problems we were having with the local NCR salesman. All of a sudden Rashid, who had been sitting just watching us, said "No problem. We deport him".

The Gulf of misunderstanding   Andrew Mason

My first sales success was to a company in Dubai that imported earth-moving machinery. The general manager was English, astute enough to know that a computer would give him a competitive advantage and old enough to be scared stiff at having to give up his business to one. A difficult situation for a young and inexperienced sales rep… It was decided that a particular area would be allocated as a computer room for the new 2903, and it was duly fitted out. When the system finally arrived, the labourers who were supposed to carry the CPU up the stairs were unable to do so, whereupon the GM panicked, decided that ICL had grossly misled him about its weight and that it was going to crash through the floor into the parts store below. He therefore called up the building's architect and asked him what was the floor loading of the computer

room. The response was something like 200kg per square metre, which threw him into a real panic. By the time the architect rang back to say that he'd meant 200kg per square FOOT it was too late, and ICL's name was really mud.

The Arabian nights' entertainment   Andrew Mason

While I was working in the Middle East, someone in the UK told me a story he swore was true, about a group of prospects from somewhere in Arabia who were over in the UK on a training course. As their first weekend approached, they started to drop heavy hints about the "country house". Their ICL minder asked what they meant and was told "you know, the country house that you have for your foreign guests, the one with all the women and so on". He told them that ICL wasn't like that but they persisted, and finally in annoyance he sent them off to the nearest Butlins for the weekend. On the Monday morning that started to seem like not such a good idea, and he wasn't looking forward to confronting them, but when they turned up they were as happy as sandboys: "We KNEW you were only kidding us. Your country place was marvellous! And the women….."

First time, on time....

Early releases of VME/B were characterised by one word - late. At one stage VME/B was being produced in Kidsgrove, but top management and validation remained in Bracknell. As days turned into weeks, management became increasingly impatient. "We haven't finished it yet" was the reason for a conspicuous delay in handover to system test. "Then just put what you have finished on a tape and send it down here so that we can make a start on validation". A couple of days later a tape arrived. It was put up on a tape deck and the machine was booted up. Nothing happened. Consternation ensued. Much diagnostic effort was expended in trying to get the new version of VME to load. Eventually it transpired that the tape contained only an end of file mark.

"That tape you sent us - its completely empty." - "But that's what you asked for." came the reply. Somehow a week's delay was bought.

Fulham - the heart of the tourist industry !

For a number of years I managed a portfolio of one day VME training courses given by members of staff from the VME System Support Centre. The venue was an hotel in Fulham. The students were given lunch in an annexe to the lecture room. The routine was always the same. At the first coffee break the lecturer was required to ask whether there were any vegetarians present and the numbers would be reported to the hotel catering staff. "Will an omelette be OK, sir?" was the inevitable question and, usually, it was.

On one occasion, a bacon omelette was served to a vegetarian. He took it in good part but pointed out wryly that he was a *Jewish* vegetarian.

Not long after this incident, the hotel had a problem. We had booked the largest lecture room for a presentation on the latest version of VME and 120 delegates were expected. Three days before the event the hotel announced that they had somehow also let the room to British Telecom on the same day and would we mind using an alternative hotel in Hammersmith? After much discussion I reluctantly agreed, but stipulated that the delegates must be bussed from Fulham to

Hammersmith at no charge to ICL or themselves. There was, after all, insufficient time to contact them and divert them to the new venue.

Anticipating difficulties, I asked Bob Speller to attend and to look after the logistics. At 9:45 he rang me. No coaches had arrived. At 10:15 he rang again. Still no coaches but 120 delegates milling about in the hotel foyer. He had been promised a fleet of taxis. By 10:30 three taxis had ferried 12 people to Hammersmith. For once in my life I took a quick decision. "Send them home. Promise them another date and tell 'em there'll be no charge". Bob did as he was asked. He arrived back in Putney later that afternoon in a decidedly merry state. At least the hotel had had the decency to reward him for the trouble to which he had been put.

The next day I stormed into the hotel manager's office. It was agreed that a new date would be provided, that no charge would be made for either day, that a letter of grovelling apology would be sent to each delegate and that bottles of wine would be provided at lunch by way of further apology. The wine was not forthcoming. We moved to another hotel a few weeks later. It was more expensive, but worth every penny.

Unsure of my own identity, 1976   **Malcolm Stuart**

The new Director of Finance had just been appointed when I had to make one of my rare visits to Kidsgrove. I took the train to Stoke and then made my way by the usual taxi to the factory.

That evening I presented myself to reception as was customary, to request that a car be found to take me to my hotel. After a short wait a chauffeur appeared, cap in hand. During the trip arrangements were made to pick me up the following morning and return me to the factory. What service !

But registering at the hotel was another matter. There was no room. My booking had been cancelled. But at length, when I convinced them that I was *not* Murray Stuart, a room was found.

All went well the following day. I was driven to Kidsgrove at the agreed time and delivered to the factory. The embarrassment started in mid morning, when I was asked to get the form signed authorising use of the company chauffeur for the two trips.

Imagine my surprise, therefore, that evening when I asked reception to get me a taxi to take me to the station. I was told not to worry with a taxi; the chauffeur was available, so he might as well take me to my train.

Mistiming   **V.A.Westerman**

Mid 1970s : It was a typical Friday afternoon and Del Iliffe (Director of Hardware Development) and Vic Thorley (Programme Manager) had flown from Manchester to attend the weekly development milestone review with Brian O'Heron at Bracknell.

As I said, it was a typical Friday with milestones slipping steadily. Eventually, Brian O'Heron slapped a can of Coke on the table and said : "If you can meet the next one you can have that !" It is not recorded whether they went thirsty.

Clarity   **Mike Ray**

The letter to Support from the Oxford University Press bore their official letterhead, the name and address of the addressee, and a heading, but then nothing else - the body of the letter was completely blank. At the foot of the page was a signature, followed by : "P.S. Words fail me".

The ultimate business technique, 1976   **Bob Peel**

The deal with Singer Business Machines was signed in the lecture theatre at BRA01, with much champagne and toasts and so on. Once the contracts were signed and the cheque handed over, more champagne was called for; and more; and more. In fact the Catering Manager had to send out for fresh supplies. I had occasion to go into the Theatre on some business or other to discover that Geoff Cross and Co seemed to be trying to get the $25 million back by playing the SBM people at liar dice! I never did find out how much of the cheque they won back!

Who who are you you ?, c 1976   **Anthony Lucas-Smith**

At LON24, in Euston, South East Sales, a telephone call about 1 pm, received by my brother.

    "Is John Hobbs Mallyon there, please?"
    "I'm sorry, he's at lunch."
    "Is there anyone else involved with sales in today?"
    "Well perhaps David Lloyd-Williams or Gareth Bennett-Coles, but they're both at lunch, too."
    "I see. Who am I speaking to?"
    "I'm Edward Lucas-Smith."

.... pause ....

    "Do you have to have a double-barrelled name to work for ICL?"

Praise from the other side   **c1976**   **Jerry Montgomery**

I was in the NZSS Project office in West Gorton and early one morning received a call from Chris Wilson. He said "I don't know what you are doing up there but I am now assured that it's being effective." He said that he had just received a call from another director, Doug Comish, who asked Chris to fire me. As Doug was at that time in charge of ICL's Industrial Relations, it just might have been prompted by a recent incident. At one of the factories there was a picket line. Late one evening the picket line disappeared for about twenty minutes; a moving van went into the site and left within minutes. The next morning more equipment needed for the NZSS build was on the build site in West Gorton.

Cast your bread upon the waters   c 1976   **Jerry Montgomery**

ID had to put a project team in place in West Gorton to ensure that the New Zealand State Service (NZSS) 2900 got built and shipped on time. The need arose because of the problem that all of the resources were being put into the very high profile Bureau West Project. The Bureau West team continually caused the NZSS build to falter; they would confiscate equipment already delivered - especially cables. But being good neighbours, and all pushing the company interests as hard as they could, the entire ID NZSS project team lent their efforts to the Bureau West Project by assisting them in packing up their system when it was finally built and being shipped to their customer site. The very next day the NZSS project miraculously recovered its build

schedule as it was found that somehow all the NZSS parts and cables had been returned. (We did find out that despite all their good work the Bureau West on-site commissioning did not follow too closely the projected times and dates, but that's not an ID story).

A little knowledge   **c 1976**   **Dave McCaddon**

I had reached the point in my career when I was at one of those crossroads. After being employed by customers on ICL 1900s for about five years I needed a change and an advance. So I found myself being interviewed for an Analyst/Programmer's post in local government, at a council in North Wales working on a 1902A. The first interview went well, and I got onto the short list to be interviewed by a panel of councillors and the Computer Manager. This was an experience I will never forget, as the interview was led by a councillor with absolutely zero computer knowledge and, for some reason, the Computer Manager was not allowed to speak. 'What is a modem?' I was asked, and gave a straightforward answer. The leader looked over to the Computer Manager, who nodded. This was repeated over a range of topics, until he finally asked me to explain what an operating system was. I started giving him chapter and verse on George 3. He eventually stopped me in mid-flow. I don't remember what happened next. Anyway, I didn't care. I had already reached the decision that if this was local government then it wasn't for me.

Welcome to ICL   **c 1976**   **Dave McCaddon**

I joined ICL at Kidsgrove to work as a software technician on the development support of VME/B. I had only been with the company a few days when our manager came to me and said:
    'What are you and your wife doing tomorrow evening?'
    'Nothing', I said with great interest.
    'Good', he replied, 'Because we're all going out to celebrate'.
    'What's the occasion?' I asked.
    'We've managed to keep the 2970 incremental service going for 24 hours without a crash.'
    'Hmmmm', I thought.

In the dead of night   **c 1976**   **Dave McCaddon**

We were working shifts at Kidsgrove, testing VME/B releases. Most offices were in darkness, and the security guards were patrolling the corridors.

In one of the terminal rooms a number of 7502 controllers were arranged in a u-shape with their attached monitors facing the corridor windows. There were a number of test procedures on the 7502s, and I well recall when one of these was set off remotely at exactly the right moment. Picture the scene : Security man going down a dark corridor, looking for trouble. In a room full of silent equipment he suddenly sees a flowerpot man waking up on the left hand monitor and running across the screen - and then onto the next screen! and the next! and all round the room! As his legs left one screen they appeared on the next, with just the right gaps in the timing to match the distance between the screens. Poor man. He was left pondering. Had he seen it or had he imagined it?

The Road to Rio   **Peter Hall**

When we took over Singer, Tom Hudson, our Chairman, decided that he should go on a tour of

inspection of Singer's South American operations. ICL had no operations in South America and obviously, therefore, we needed to decide what it would be worth doing with the Singer activities there. I went along as Tom's bag carrier.

We were on a long flight from Mexico City to Rio with the Singer South America top man. I sat with Tom for the first half of the journey, playing cribbage - and so losing quite a lot of money to the boss - and consuming a significant quantity of gin. For the second half of the journey I decided that I had had enough and that it was the Singer man's turn.

When we got to Rio the man from Singer was paralytic. I was off the plane first, then my Chairman appeared. But no sign of Mr Singer. Tom explained to me that he had abandoned him unable to rise from his seat. We went through immigration etc, and eventually watched him being helped down the aircraft steps and into the terminal. Unfortunately we were the last plane in that night, and immigration had been shut down and locked up. It was quite a while before we could extricate him.

Obviously a man who could not keep up with the Chairman would not last long in our company - and he didn't.

Taking dictation   **Peter Hall**

Tom Hudson was not only a very wise Chairman; he was also a very friendly and approachable guy. We had a press conference. I forget what it was about, but I do remember Tom Hudson's opening remark : "This is what Peter Hall says I have to say". It can't have been a very important occasion !

My ducats, oh my ducats   **Peter Hall**

We had spent a difficult dinner at Carlton Gardens, with an important customer whom we were letting down. Geoff Cross was doing a superb job convincing him that everything was in good shape (when it wasn't) and that we were confident of meeting his requirements on time.

After the customer had departed, and we had gone over what we needed to do next, we were both flaking somewhat. I was all for home and bed but Geoff said no, we should go to a casino and wind down winning some money. I declined, but he insisted, and the only way I could escape was to give him some money to gamble with on my behalf.

Next day I asked him how he had got on, and could I have my winnings please. "Sorry", he said, "I used your money first and lost it. But I did quite well with mine !"

Another lesson learned ! Only as a last resort get the Managing Director to help you out.

The Christmas Bonus   **1976**   **Brian Russell**

In those relatively prosperous days we had a Christmas bonus for several years in succession. The first was in 1976 and comprised one bottle of 'Queen Anne Rare Scotch Whisky' and one bottle of 'Gonzales Byass Jerez medium dry Amontillado Sherry'. The memorandum from on high said that the bonus was to be distributed to every employee on 21st December, and that every effort should be made to deliver on that day, even if this meant managers hand carrying to

individuals' homes. One particularly conscientious teetotaller on our floor poured both his bottles down the sink.

Bomb Scare at Harrow   **c. 1976**   **Philip Sugden**

Two or three weeks before Christmas one year in the seventies, I received a parcel, roughly 9" cube. This was totally out of the blue and unexpected. As there had been a spate of IRA parcel bombs in the recent past, apparently addressed at random, I was reluctant to open the package up and hope for the best. I racked my brains to think if I had sent off for anything and even checked with other members of the family to see if they had ordered anything. Nothing came to mind. The only clue on the box was a London NW7 postmark, which was not totally reassuring as NW7 covered an area with a significant Irish population.

In the end I went to seek the advice of the office manager. He seemed rather reluctant to become involved but did agree to look at the problem from a distance. He recognised the type of box and diagnosed the likely contents as a Guinness Christmas Pudding. The Guinness Group was a customer of mine at the time so this seemed to be a plausible explanation. His confidence in his diagnosis did not extend to watching me open the parcel but fortunately he proved to be correct.

The ingredients of the Christmas Pudding including a pint of Guinness, which did not strike me as an obvious choice. Nevertheless it was delicious when cooked and very filling. Indeed it was so filling that we did not finish it off in one sitting. When we came back to try it cold a couple of days later it had set as hard as a brick!

Another world, wasn't it ?   **Alan Trangmar**

One of the more remarkable aspects of arriving in ICL Stevenage, at the end of 1976, was the paper-based nature of the whole programming process. Design documents were hand-written and then typed - the word-processor didn't reach us for some years. Screen layouts were handwritten on 25 by 80 paper forms - to be later hard-coded in the COBOL program source, complete with 1900-series 3-shift format effectors.

For the whole design and programming department of thirty people we had just one VDU screen and two 'termiprinters' - slightly faster versions of teleprinters - one of which broke down shortly after I arrived. COBOL programs were handwritten onto coding sheets and sent off to the punch room in Letchworth where they were entered to the machine. We then used the very limited editing facilities to correct any errors made by the punch room or by ourselves, and then to compile and test the programs. Online testing of course meant that one had to book the one and only VDU, so it was quite an event. Any serious error meant running another consolidation, which effectively took over a day.

As a result there was a culture of "a good programmer only ever needs five compilations to get a program working". Not that this was very often achieved. Dry-running was a much vaunted - if often skimped - way of checking a program before the real test.

If all the terminals were occupied there was one way in which a desperate programmer could get an edit or a test run done: hand-punch the edit onto cards (all the keyboard-operated card punches were in the punch room, five miles away) and use the RJE (Remote Job Entry) card reader in one corner of the office. I remember being vehemently informed of the vastly superior moral virtue

acquired by programmers who did ALL their edits by hand-punched cards.

A few years later ICL internal systems took a giant leap forward: we acquired VME machines. Of course, they couldn't be new, because the customer always came first. The director proudly announced the acquisition of two 2960s, cheap because they were insurance write-offs after smoke damage in a fire at a customer site. ICL wouldn't promise to support the machines for the customer, but it was willing to use them for its own internal systems.

Liquidity in the Gulf   Andrew Mason

Alcohol was also a concern in the Gulf, mainly its availability in such places as Kuwait. As a rule, the Customs officers at Kuwait airport would turn a blind eye to the odd bottle being brought in by ex-pats, but sometimes they felt they had to get strict. On one of these latter occasions an ICL man from Baghdad, Cam Angus, got caught with a bottle of Scotch which they proposed to confiscate. Cam protested but to no avail, until eventually he said "Well, at least let me have a drink of it". To his surprise they agreed to this and took him to a back room, where he was presented with his Scotch and a glass, while what seemed like the entire Kuwaiti Customs service crowded round to watch. It turned out that they thought he was going to drain the entire bottle and were very disappointed when he only had one glass!

Liquidating Dataskil in the Gulf   Andrew Mason

We had a team of 9 Dataskil programmers at our biggest customer, Kuwait Oil Company, and at one stage their manager decided he ought to visit Kuwait to check up on them and talk to the customer. He had heard that booze was difficult to come by in Kuwait, particularly beer, so he got his secretary to go and buy nine Boots beer brewing kits, gift wrap them and put the names of his nine programmers on the cards. He then bought three bottles of Scotch at Heathrow, one for his own consumption and one each for the local ICL manager and our agent. On arrival at Kuwait airport he foolishly denied having any booze at all (which they didn't believe, of course) and then got quite stroppy when they confiscated it all from him. Finally they told him to go away and return in the morning if he wanted to argue it out with the chief of Customs. Instead he came and told his tale of woe in the ICL office, and of course our agent, galvanised by the thought of missing out on a bottle of Scotch, rang his uncle who was chief of Customs to see what the story was. "Well, this man said he had no alcohol, which is clearly ridiculous as he's English, and then we found three bottles of whisky and nine 40-pint beer brewing kits. We asked him how long he was staying and he said three days. Well, we know that Englishmen can't drink as much as Kuwaitis, so we can believe the three bottles of whisky. But we don't believe anyone can drink 360 pints of beer in three days!"

What's in a name?   Roy Fulker

After I left ICL I started my own business and a few years later I found myself asked to perform some duties at ICL in Feltham. One of these duties was to work on the Global Tours and Travel project. On the first day on this project I was asked to collect the management services manager of Global from Feltham station (I can't remember his name now - but we'll call him Mr Williams). I hadn't met Mr Williams before but went to Feltham station confident that I would find him.

I drew into the very small lay-by outside the station and noticed a man with a briefcase waiting

there. I opened my car window and said 'MrWilliams?'. At which he replied 'Yes' and jumped in. We then drove off and passed polite conversation about his journey and the meeting we were to have. On nearing ICL, my passenger said 'How long have you been with NatWest?'. I was stunned by this and so was he when he discovered I worked for ICL. I had kidnapped him and left the Global man outside Feltham station alongside a NatWest driver who couldn't understand the non-appearance of his passenger.

The CHF Feature   **Henk van der Vegt**

In 1977 ICL Nederland got a large order from the Dutch internal revenue. Ten networks were required, each to consist of a 1503 disk system as controller for ten 1501 terminals, and they were to be used to enter tax payments. This meant that all Dutch tax payments were to be handled via ICL systems. One of our advantages was that we could connect the ICL tab card readers to the systems, so as to read the 52-column tab cards used throughout Holland for the "accept giro system".

In total one hundred and one 1501 terminals had to be delivered, each equipped with the two standard mini tape drives. I thought this was a bit excessive : only one mini tape drive was needed, and only to load the bootstrap software each morning, since the application software could be loaded from the 1503 disk. I noted that the 1502 large screen version of the 1501 could be ordered without mini drives but with a chip for bootstrap loading instead.

As product manager I saw what looked like an obvious opportunity for a price reduction if the 101 1501 terminals could be delivered with the 1502 bootstrap chip instead of the mini tapes. Before approaching the Utica factory I decided to ask our workshop to test my idea in practice and in just a couple of hours I had my answer : "It works perfectly".

I sent a telex to Utica explaining my requirements, and asked them to specify the amount we could deduct fom the standard price as a result of this change. In reply I was called from Utica by an American colleague who told me that what I wanted was technically impossible. When I informed him that we had already performed a successful test using the 1502 chip on a 1501 it went quiet; he would have to talk to somebody else and I would hear later.

The next day there was another phone call from Utica, this time by a manager, telling me that although what I wanted was technically possible, it would cost more. When I asked him why he said that this would force him to unpack the 101 systems, take the mini drives out, put the chips in, and repack the hardware.

"Does this mean that you have systems in stock ?" I asked this manager, which he confirmed. "In that case", I bellowed, "I would like to know why you are six weeks late with the delivery of the forty standard systems we ordered for another customer. Only last week you sent me a telex explaining a further delay." He had no answer to this. "Well", I said, "If you still have to produce my 101 systems, you can jolly well build them as requested. I've given you all the part numbers involved, including the one for the blanking plates to cover the gap because there are no mini tapes."

The next day I received a telex confirming that the systems for the Dutch internal revenue were going to be supplied with bootstrap chips instead of mini tapes.

After delivery of these systems we received the Utica invoice, stating the standard price for 101 1501 units but with a $65.65 reduction because of CHF. When the Dutch order-handling department asked for the meaning of CHF Utica answered that it was the code name for this project and stood for 1501s with the Crazy Henk Feature.

Those people next door, 1970s   **Tony Maynard-Smith**

One of the (many) good things about working for Letchworth Development Centre in Number 3 Factory was watching the occupants of the site next door who were usually good for some inspiration when programming was getting a bit tedious. They made steel constructions of no obvious purpose, that rumour said were bits of North Sea oil rigs, though the ones I remember looked more like sewage stirrers.

One day they got a firm of contractors in to put up a new building on the site, essentially a large shed built on a framework of prefabricated concrete pillars and beams. These contractors were real professionals, it was a joy to watch. They unloaded and put the whole framework together in a day, and towards the end there were guys walking about on top, on beams a few inches wide, two stories up, with no safety harness, and jumping on the corners to make sure they were properly seated.

The competence of the actual tenants was better illustrated by the time they were putting up a fence along our edge of the site. One of them was driving a dump truck and had just tipped a load of concrete into a hole where a fence post was to go. He then selected the wrong gear and neatly drove the dump truck straight into the hole. They managed to get it out before the concrete set, by extremely unconventional use of a fork lift truck.

Walls have ears   **Mike Forrest**

My wife and I were having dinner in a country hotel in France when I was called away for a phone call. It was Chris Wilson, and his news was of the unexpected resignation of Geoff Cross. Returning to the table I passed the news to Anne, sotto voce - I thought. But the Americans at the next table were all instant attention ! "Say, is that right ?" They had a contract to write some microcode for ICL, and feared it would be in instant jeopardy.

Jeopardy averted   **Peter Hall**

We were having an Atlas Club celebration in Monte Carlo. All was organised. The Managing Director's speech was all written, agreed and rehearsed, when out of the blue Geoff Cross resigned. This was not funny. A new speech was needed for the new Managing Director - Chris Wilson. All this was successfully accomplished, and about ten of us who had been involved decided that we could justify a celebratory dinner at the best restaurant that could be found. So we went to a very swish place along the coast and had a very fine meal. And then came the bill. They would not take a credit card, or one of my cheques, and I certainly did not have the cash. While I was concentrating on the negotiations, the rest of the party abandoned me. None of them were to be seen. I had visions of washing-up for a week, or at least of being detained until rescued eventually by one of my 'friends' returning with some money !

But in fact, when I replied to their request for my address by telling them that I was staying at the Palace Hotel, everything changed. They were very apologetic. Why didn't I tell them that in the

first place ? "No problem about the bill, Sir. Just pop in when you can."

So we actually paid in cash next day.

Not unless   **Richard Dean**

I can't remember whose idea it was that I should impersonate Churchill at some sales get-together. "Not a chance", was my first reaction, but he insisted, and tried to apply pressure. Not an inch would I budge - the whole idea was just too embarrassing. "Think of it, you could have a really good cigar", he said, and must have detected a slight symptom of the weakening of my resolve. But all the training in negotiation held firm, and I remained adamant. Indeed, I managed to talk him up to buying me a whole box of cigars before reluctantly consenting. There were good cigars too - I made sure of that.

Operators and other vermin   **Andrew Mason**

One of ICL's more notable successes was the sale of a System 4/72 to the Post Office Savings Bank. This was installed in an old building on the waterfront in Wellington, above (as it turned out) one of the city's main sewers. A series of faults developed at one stage, which on investigation turned out to arise from what seemed like a human hand brushing down the pins sticking out on the CPU backplane and thus causing short circuits and so on. Suspicion fell on the operators, who it was thought were not above a bit of sabotage when operating the UDR (a deadly boring task) and in need of a smoke. They, however, denied ever having opened the CPU cabinet, let alone tampering with the backplane. The problem was finally traced to rats from the sewers who had come up the ducting into the nice warm CPU during the cold weather. Every now and then they would lose their footing and fall off the top of the backplane, bending the pins on their way down.

Bougaired in Bougainville   **1978**   **Pamela Garnsey**

I was National Support Manager for ICL Australia at the time. We had sold a dual DME machine - a world first - to be installed to run the copper mine in real time on Bougainville, an island in the northern Solomons, belonging to Papua New Guinea.

It took much persuasion for the customer to agree to a joint steering committee, but eventually about eight heavies from ICL took off at great expense for Bougainville. After all, the company's reputation was at stake across the whole of the southern Pacific.

We were thrilled when we found that the Project Manager, Rob Hack, had booked us into a tropical island resort off the coast for our pre-steering committee internal meeting and overnight. The place was a little paradise. However, next morning when we all assembled in our little business suits it was found that THE boat had gone to the main island to pick up the cleaners and had not returned. Brian Roper, the PNG Manager, said 'No problem'. We would phone for a boat to come over for us. No telephone. Only a radio connection, over which Brian could only hear the waves, and we could hear those already.

Our resourceful, though by this time somewhat red-faced, Project Manager eventually took off in an object not much bigger than a bathtub and about as seaworthy, to organise a rescue. It transpired that the island's passenger boat had broken down at the main island. Time passed. We

were eventually picked up by the mine's hydrographic survey boat, arriving at the mine early afternoon for our 10.00 a.m. meeting. The mine bigwigs were unavailable, and the whole thing was totally unproductive, except for the splendid photo of us all lined up on the beach in suits and briefcases waving goodbye to the gallant Rob in his bathtub.

A sad postscript : I recently saw some TV footage of Bougainville sadly ravaged by civil war, and the jungle gradually but inexorably taking over the waterside town and the mine town in the mountains.

Turning away wrath   **c1978**   **Jerry Montgomery**

The ICL Australia MD Neil Lamming had all of his direct reports on the carpet in the Sydney Boardroom. Neil was very displeased about something and was standing up at the head of table and reading the riot act to all of us. He was very serious and also very angry. He was just about to give us the really hard word about what would happen if ... And just at that moment I managed to bring my hand down very hard on the edge of the saucer my coffee cup sat in. The cup was half full and it jumped up about 10 inches, did a flip, and came back down on to the saucer upside down, all without making a mess on the table, but what a noise! Everyone in the meeting giggled a bit at this point. Neil put his hands on his hips, said "Oh Hell, what's the use?" and sat down without concluding his tongue-lashing.

End User Computing as it was   **Alan Wray**

While in Spares Planning, I started to use the Kidsgrove online service, via an acoustic modem, to help prepare figures for the Product Authorisation program and the Five Year Plan. However, it was very inefficient and unreliable. When I rejoined Les Graves to continue Five Year Planning for Customer Service, I prepared the first plan manually on data sheets. A colleague, Eric Roy, looked at it and said that there must be a better way. After looking at a few options, we acquired from the Used Equipment Store a 1501 for programming and a program-linked off-line 1505 and printer for output. Eric programmed them, first in Basic and then in Cobol, in time for the next Plan. Of course, this should all have been done officially through Corporate Information Services, costing an arm and a leg, and with each change taking ages to complete. Someone reported our activity to CIS and I had to call Alan Rousell to explain what we were doing. He said: 'Bloody good show! Carry on!' Probably a first in ICL end-user computing.

What the heart doesn't know   **H.C.**

There was a Press event in the conference room at Carlton Gardens, to announce CAFS to those superior journalists whom we would allow into that august building. Its workings were explained, and it was pointed out that it was ideally suited for exploring a wide range of intelligence material. "So are the British Intelligence Services using it, then ?" was the inevitable question. While I was still floundering about how to answer that one, Alan Rousell smoothly stepped in with : "Even if we knew the answer to that question, we couldn't tell you."

Succinctly   **1979**   **Vernon Hardman**

Peter Aylett was asked for his comment on Ninian Eadie's business plan. "Neat and tidy - like a grave". That was all.

Better than an English car   late 1970s   **Henk van der Vegt**

It was in the late seventies that we identified an urgent need for a good application for wholesale Cash and Carry outlets - a kind of supermarkets for retailers. Their main problem was that while customers had to pay at the checkout as in a normal supermarket, the regulations required payment against a full invoice, with the customer's name and address, each item line showing a full description, and an overall VAT calculation.

I remembered having seen such an application at a German Cash and Carry, using ICL Point of Sale terminals connected to an ICL 1503 disc system acting as store controller, this equipment having become available from the US factories following the takeover of Singer Business Machines. A quick investigation showed that the application had been developed by a 6-strong system house in Heidelberg and of course they would be delighted to make a Dutch version for customers in the Netherlands.

The application was carefully put together, with strong back-up facilities and emergency procedures in case the store controller should ever break down. The general principle was that customers passed a checkout with an ICL PoS terminal where their customer card was read and the OCR labels on their merchandise were scanned. After the scanning was complete the customer went to the cashier's desk for payment, and by the time he got there the invoice had been printed by a matrix printer connected to the 1503. The whole system was very simple to operate, so much so that a German customer bluntly told me : "It's so easy that if I'm hiring people for my checkouts I look for muscles rather than brains".

We proposed this system to the Dutch Cash and Carry market and it was a bull's eye ! Within 18 months we had systems running at more than 30 sites.

Although nominally I only had marketing responsibility I was in fact acting in several roles in this project : travelling up and down to the Heidelberg system house helping them translate their software into Dutch and explaining customer requirements. I became an expert, and also acted as sales manager, accompanying salesmen on visits to hot prospects.

The only one who suffered was the specialist salesman from our main competitor, by coincidence a company which also had a three-letter name and which was not used to losing business to a little outfit like ICL. After we entered the market and had our first successes the poor competitor lost all his opportunities to us. The first sign of his frustration was when a new customer who ordered ICL systems for his 9 sites told me that the salesman from the other contender came by and asked for the return of his business card "because you won't be needing that anymore".

In fact, he went even further. John, our salesman for wholesale Cash and Carry in the South of the Netherlands, happened to be visiting a prospect and had just been told that they had decided to equip both their sites with ICL systems when the phone rang. It was our competitor, and our new customer was kind enough to switch on his phone's speaker. "Mr X, I'm phoning to ask you when you intend to install our PoS system at your C and C outlets". Mr X took the opportunity to inform the man that ICL had been selected as the preferred supplier, on the ground that their solution was seen as being far superior to his proposed system. The reaction was peculiar : "So you are buying from an English company ! Well I hope for your sake that their system is better than an English car." Our customer smiled and answered : "You must be misinformed. The equipment is American; the software is German; and the support organisation is Dutch.

Furthermore, I have just bought a new Jaguar, the third in a row, and I am quite happy with my English car. Good day, Sir." And as he put down the receiver his smile became a big jolly laugh.

The whistling was the worst of it   late 1970s   **Henk van der Vegt**

As more and more systems were installed at Dutch Cash and Carry sites, ICL Nederland decided that it needed more in depth knowledge of the software, in order to be able to answer more questions directly and to reduce dependence on the Heidelberg system house.

I was asked to introduce Wim, a student at a Technical University, who was working as an ICL freelancer and was a recognised expert on ICL 1500 software. In his way Wim was a genius but, as you will know, many of these genius types have some pretty peculiar habits.

An appointment was arranged with the Heidelberg people and I told Wim we would leave by car from the Amsterdam office. I met Wim at this office, and when I said "Let's go" he said "Fine, let's go and get my suitcase". When I asked him where his suitcase was he replied "at home in Delft". We were already bound to drive to Heidelberg and now this guy asked me to drive to Delft to get his luggage - a full hour in the wrong direction and, of course, another hour back! When I asked why he hadn't brought it with him he just smiled.

We reached Heidelberg in the late evening and the following morning I took him to the office of our German software partners. They took Wim very seriously, and two of the developers took him away to their own office for a full explanation. I stayed behind in the director's office to discuss some business issues. After half an hour two distraught Germans came back and said: "We can't stand it any longer!" When we asked what the problem was they explained: "Every time we give him a document he takes it and while reading he walks up and down the room and he whistles, whistles all the time, and so out of tune - we've had it!" I went for a talk with Wim and was able to convince him that Germans don't like whistling, but I couldn't stop him walking.

At lunchtime our hosts took us to a Kneipe (a pub where they serve hot meals in the middle of the day). After taking our food orders the waitress asked us what we wanted to drink. The Germans both asked for beer, and I wanted a dry white wine, but Wim asked for a glass of milk. The waitress looked at him in astonishment and then said: "I regret to inform you that we have no cow!"

New Zealand really is different   **Andrew Mason**

Sometime in the late 1970s the Managing Director of ICL NZ, George Hiam, was preparing his submission for the next year's budget round. First, of course, came the assumptions on which the bid was made – National Party continuing in government, business conditions quiet, inflation continuing at 17% (or whatever it was – it was certainly pretty high). Back like an arrow came the response from Chris Wilson, who at the time was head of International Division; "17% inflation in New Zealand unacceptable".

A very pleasant evening   **H.C.**

When Mike Forrest took over as Director of Corporate Information Systems he very sensibly decided to get to know his new direct reports as well as he could, and we were all in turn invited,

with wives or husbands as appropriate, for an evening at his home in Sonning.

Accordingly, Yvonne and I found ourselves one foul wet evening in December turning off the A4 at the specified side road, turning off that into the appropriate lane, and turning off that through the exactly described gateway, in order not to annoy the neighbours by leaving an inconsiderate car in the lane.

So there we were, apparently on a bit of hard-standing outside a garage. The house looked as though it was probably over *there*. But between us and it there was nothing visible but some dank and dripping trees. Then, beautifully on cue, some outside lights came on, and we could immediately see the path that led to the front door.

We went in and were introduced - in this order - to Mike's wife, to his daughter, to his dog, and to his mother-in-law. Coats were disposed of, and then there was one of those awkward pauses when everybody is waiting for everybody else to say something first. I'm normally terribly bad on such occasions, and remain frozen in tongue-tied embarrassment, but for once I had a brainwave, and said brightly : "It was very good of you to switch on those lights when we arrived. Did you hear us coming ? Or have you got a sensor that does it automatically ?"

Whereupon the mother-in-law leant over to me and said : "You naughty boy ! You shouldn't have said that ! There'll be no peace now till he's got one!"

Chapter 8 - ICL in the 1980s

Due Deference   **Brian Cook**

Harvey Dodgson, then Manager of Software Marketing within Product Marketing Division at Slough, attended one of Peter Aylett's management meetings, intent on getting across the message that the UK business forecasts for software sales were really not up to scratch, and that Sales would seriously have to apply more effort and care to the forecasting process. Peter sat through the presentation in silence. Then he responded - forcefully, as was his wont - with his personal view of the relative importance of the Sales Divisions as against Product Marketing Division, which was not wholly complimentary to PMD. He concluded : "So when you come to tell us these things, Harvey, we expect you address us with a little more ... Brian, what's the word ? ... yes ... with a little more *grovel*."

Succinctly, 1980   **Vernon Hardman**

Peter Simpson, Director of commercial Services, emerged from a long, harrowing and indecisive meeting with the company's internal and external lawyers. As he entered his office for his next appointment he was heard to comment ruefully : "The trouble with this company is that it has too many one-handed lawyers. You ask them a question and the answer is always the same ; 'On the one hand ..... alternatively, on the other hand ....'"

How we brought the good news from Bracknell to Eindhoven   **H.C.**

Philips, a sensible company if ever there was one, wanted to know about CAFS, so an expedition was organised. There was me to do the presentation, Barrie to do the demo, and a salesman called Peter to see fair play. Peter had a foot and ankle in plaster. Barrie organised a Ford Transit van to transport us and the gear. It was January, and perishing cold.

We reached Dover about mid-morning, and went to Customs to get clearance before joining the ferry. The documentation had been prepared by the company's regular shipping agent in Stevenage. "What's all this, then?" said a hostile voice from the other side of the pigeon-hole; "It doesn't cover Austria." "But, officer, we're only going to Holland." "I don't know that, do I ? They got roads all across the continent, ain't they ? I'm not letting you loose in Europe without the proper papers. Go and get 'em fixed."

So we drove to the far end of the harbour complex to the agent's Dover office, missing our ferry in the process, to get an irrelevant reference to Austria. The agent, who had probably played this game before, said that an amendment wouldn't do; he'd have to issue a complete replacement set. That took time. We got back to the same pigeon-hole. "What about Yugoslavia ?" was the opening gambit, and if the agent hadn't known something discreditable about the officer's mother we might never have been allowed to sail.

So we were late getting to Ostend, and were waved straight off the ferry onto the motorway. Probably a mistake; we should have cleared Belgian Customs. Of course there was nobody on duty at the next border post, so we sailed into Holland without stopping, Barrie saying airily that we'd sort it out with Customs when we got to Eindhoven. But, of course, by the time we got there it was late, and every good Dutch Customs officer had long gone home.

The following morning we turned up at Philips, an enormous complex of immaculate buildings in immaculate grounds. Well everything would be immaculate; the Dutch like it that way. With hindsight one can see that our arrival could have been managed better. Instead of a smart van with the ICL logo, here was this scruffy Arthur Daley off-white Transit. And instead of a small amount of modern computer equipment, there were several trolley-loads of desks, a 7502, a 7502 disc unit, two VDUs (one as a spare), two keyboards, and two large cardboard boxes from the Bracknell greengrocers, one containing a young rats' nest of cables topped off by a telephone, and the other a fairly comprehensive DIY kit of tools.

It all actually fitted together quite successfully, and the dial-up connection to Bracknell worked a treat. The demo too did all that it was supposed to do. But credibility had been irretrievably lost before we began and, although our hosts were politeness itself, it was obvious throughout that we were wasting our and their time. So everything went back into the van, which we pointed southwest at full speed.

I suppose it would be fair to say that respect for bureaucracy was never one of Barrie's strong points, and by this time I was past caring much whether we cleared Customs or not. We probably got onto the ferry as a private vehicle, whereas we should have been on its manifest as a cargo-carrying entity. Who knows.

Nemesis, I now realise, lives in Dover. Her Majesty's Customs and Excise, "The Watchdogs of Her Majesty's Kingdom" as they called themselves on this occasion, were ready for us. All our departures from proper procedure, all our irreverence for the official paperwork, were now mercilessly exposed, and no excuses were accepted. It was late in the evening when we landed, and the arguments, in which Barrie took the lead, lasted for most of an hour. Next they told us to drive the van into the rummaging shed, park, and stay in the vehicle; that was about 11 pm. All the Customs people then retired, presumably to decide in private what combination of boiling oil and castration was appropriate in our case.

God, it was cold ! Sometime after midnight two of them emerged, lethargically displaced a few cases from the interior of the wine-loaded artic alongside us, looked at them, and put them back again. Us they comprehensively ignored. With the engine switched off, there was no relief; the cold seeped in and through our very beings. It was too cold, oh far too cold, to sleep.

Just after two in the morning some Jobsworth poked his nose out of his comfy warm office and told us we could go. No explanations. Just "OK, you can go." If there had been any possibility of movement in our frozen muscles we might have lynched him. As it was, the heater was turned up full and we hit the trail for home.

Philips never did place an order for CAFS 800. Pity.

Pure Hoffnung   David Bell

We had received a golden opportunity to demonstrate CAFS 800 to an important merchant bank. This might be the chance to get a foothold in a fabulously rich market sector. So Barrie Boorman and I went to their office in the City, me to do the talking, Barrie to do the demo. He therefore was carrying the 7502 needed to communicate with the CAFS 800 in Bracknell. As we got out of the lift at the designated floor, the loosely coiled cable fell off the 7502 and unfortunately the doors closed with the plug still inside. Barrie didn't realise this until he was spun round and the

7502 was lifted out of his arms and up towards the ceiling. It hung there for a few seconds until either the cable gave up the ghost or the plug was torn off. Then naturally it descended, and unsurprisingly Barrie was just too slow to catch it. So now you know why the financial sector has never been as fully switched on to CAFS as it should have been.

Eastern Europe - 12   Sandy Walker

It was well known when we were dealing in Czechoslovakia that Janoš Kadar's hot line telephone only had an ear piece.

Eastern Europe - 13   Sandy Walker

And there was the Professor in Warsaw who with a completely straight face said that there were two stages of Communism. The first was marked by the difficulties of growth; the second by the growth of difficulties**.**

Reputation   Mike Forrest

Chris Wilson claimed that I was the only person in Paris who could be a) located on the phone, and b) sober. But he was sometimes wrong about the sober.

Probity - 1   Mike Forrest

ICL Germany had been making a loss for twenty years. However the Federal Government eventually assessed them for tax, on the basis that no sane company would go on running at a loss for so long, so we must be hiding the profits. We paid, because it would have been more expensive to dispute it.

Probity - 2   Mike Forrest

I was discussing the position with the manager of ICL Belgium, and we got round to his profit objective. I remember he said : "There's only one way we're going to make this - we'll have to rob a bank. Come on, let's go and get it over with."

Problem Sorted   Mike Forrest

Richard Chamberlain, returning to his hotel bedroom, found a burglar going through his belongings. Startled by his shout, the burglar dashed to the window, scrambled over the balcony railing, lost his grip and crashed with a sickening thud to the patio below. Richard rang Reception. "Don't you worry, Sir," came the calm reply; "He won't be bothering you again."

New Zealand - 3   Andrew Mason

I spent several years in Marketing in ICL New Zealand, mainly looking after our software products, and as a result came to have a lot to do with the Data Management mob in SLH01. The main concern we had at the time was the LINC software which had been developed by a New Zealander and was being very aggressively marketed by Burroughs. Our competing product

RADS was late and getting later, while Burroughs were pillaging all our mainframe accounts. RADS stood for Rapid Application Development System (it finally saw the light of day as Application Master) but Richard Dowdeswell swore that he'd had a bet with someone that he'd get it named after himself, and did, because it ended up being called Richard Anthony Dowdeswell's System.

New Zealand - 4   Andrew Mason

Very late one night (or early one morning) I was dragged from deep slumbers by the telephone. "What the bloody hell do you stupid bastards think you're bloody well doing? Can't you even keep your bloody salesmen under control?" came the dulcet tones of Yvette Asscher all the way from Slough. Not having a clue what she was talking about, I had a rather surreal conversation. The following day it emerged that a couple of ICL NZ salespersons, at Atlas Club in somewhere nice like Hawaii, had cornered Robb Wilmot round the swimming pool and bent his ears about the problems they were having with our oldest customer Cadbury's, who were about to switch to Burroughs and all because we had nothing to match LINC. "But we've got RADS", said Robb. "Not in bloody New Zealand we haven't", they said. "Don't worry", said Robb, "I've talked to the people in Bracknell and they tell me it's ready. I've even seen the video!" And thus it was that shortly thereafter a Robbogram hit Peter Gershon's desk informing him that Robb would hold him personally responsible if ICL New Zealand lost the Cadbury's account, and even more shortly after that I got a nocturnal phone call from an incandescent Yvette. Needless to say, RADS wasn't ready and we did lose Cadbury's.

The Last Chocolate
HC

But even if Cadbury's did switch their live processing to Burroughs, that wasn't the end of their connection with ICL kit. During 1997 it turned out that one Bruce McMillan, a very enterprising ex ICL engineer, had been instrumental in rescuing the ICT 1301 which had been a previous Cadbury's machine. Indeed, it had originally been installed at Cadbury's in Hobart in 1963, before being shifted to New Zealand. After languishing in store for a long time, it has now been reassembled in the Otago Settlers Museum in Dunedin, where Bruce is hoping to get it progressively restored to working order. Also in Bruce's care is a remarkable selection of Powers-Samas 40 column equipment, including a sorter, an EMP, and a tabulator complete with summary card punch.   Anybody from ICL intending to visit New Zealand should certainly include a visit to this Museum in the itinerary.

New Zealand - 5   Andrew Mason

Around that time Tony Neville was posted to NZ as Managing Director. I had known Tony in both East Europe and the Middle East, where I had developed a lot of respect for him. I'm not sure if this was the case with all my NZ colleagues, however. At one stage we were about to sign a major retail deal with a highly respectable and old-established department store in Auckland. The MD was an Anglophile of the old school, and was delighted to be putting his business with a British company. And in fact he told Tony as much, who replied that actually a lot of our technology was procured from the Japanese company Fujitsu. "But ICL is British", said the prospect. "Well, not entirely. We have major overseas shareholders". "Oh, but you yourself are British, Mr Neville". "Actually, I was born in Riga". At this point the salesman went outside and shot himself.

Around that time we were bidding for a very large deal with a 2900, which of course meant the dreaded Blue Border. The salesman, Neil Cameron, went to a lot of trouble over this and did what he thought was a pretty good job. The Putney apparatchiks, of course, thought otherwise and were particularly upset about one item where Neil had put nil man-hours as his contingency allowance. As this item was not relevant to the proposal, he felt he didn't need to put anything. Nevertheless the argument raged back and forth across the telex wires, until Neil had a brilliant idea. In his next telex he offered to double the offending contingency allowance and was promptly accepted. End of problem.

New Zealand - 7   **Andrew Mason**

Tony Neville was succeeded as MD by a New Zealander called Tim Cullinane. Tim decided that ICL NZ was top-heavy, and that he had to have a major re-structuring. So the senior management were called in and briefed, and the following day all affected staff were told – about 70 out of a total of some 400 (though there were only 9 actual redundancies). As may be imagined this caused a major stir both in the company and in the market, particularly when one of the "redundees" went to the press and told heart-wrenching tales of people being given $5 for a taxi, a plastic bag for their personal belongings and 5 minutes to be off the premises. The reality was rather more mundane, in that those being made redundant were indeed given a taxi fare home, and someone who didn't want to come back was offered an ICL promotional bag for their small things, but the whole thing was handled very sensitively overall. This didn't stop the press seizing gleefully on the incident, and the term "being plastic bagged" still has special meaning in the New Zealand IT community.

New Zealand - 8   **Andrew Mason**

During Tim's tenure as MD, we did a deal with a Danish company which had an accounting package for the ME29 called MERA. The MD of that company came to visit us, and turned out to be very partial to beer – in Copenhagen he was used to having a Carlsberg every 15 minutes of the day, while in NZ he took to Steinlager like a duck to water. He had his first meeting with Tim Cullinane at 9.00 am on the Monday. Tim, of course, offered him something to drink. "Yes, please, a Steinlager" came the serious reply. Tim thought he was joking and asked if would have milk and sugar. "Not in Steinlager" came the serious reply. So Tim had his coffee and his visitor had two Steinlagers.

Well goodness gracious me !   **Richard Dean**

The new Computer Centre in Delhi was a splendid place, and ICL was proud to have been associated with building and equipping it. So splendid a place could not be opened without a suitable amount of ballyhoo, and a suitably august assembly of the great and good had been brought together for the occasion. After an equally suitable succession of speeches, the Minister stepped forward to switch on. It was exactly as he pressed the switch that the first tile fell from the false ceiling, to be followed by all the others. The contractor could not have made it more obvious that his short cut had been less than successful.

How to get a Double Majority   **H.C.**

In the dim and distant early 60's I left ICT, as the quickest way of achieving a salary increase, only to return to the fold after fifteen months. This meant that my personnel record showed not only a Date-of-Joining but also, to take account of my previous service for pension purposes, a Calculated-Date-of-Joining. So eventually, in 1981 or so, I clocked up twenty-one years service from my Calculated-Date-of-Joining, and was invited to join the Majority Club. There was a quiet little party in the Putney Social Club, and people said nice things. Fifteen months later I had clocked up twenty-one years of continuous service from my actual Date-of-Joining, and the Personnel commemoration function swung into action again. I was invited again to join the Majority Club. What was interesting was to observe the number of people who repeated their congratulations, almost word for word.

Down to Earth   **Dik Leatherdale**

Jim Reed was dispatched to Africa to oversee the installation of two ME29s for Zambian National Railways. ME29s needed a high quality earth to run reliably - something not easily obtainable in Zambia. The usual copper rod driven into the ground had little effect. Jim ordered a large pit to be dig outside the building. Several scrap cars were pushed into the pit, connected together with thick copper cable, covered over and watered copiously. No improvement was forthcoming. After a bit of lateral thinking, it was observed that the railway track passing by the building could be considered to be a busbar several hundred miles long and connected to earth at two foot intervals.

This was highly successful. The ME29s settled down to a useful existence interrupted only by the occasional thunderstorm within a radius of 80 miles.

The lexicographical CAFS   **Pamela Budd**

Morale in the CAFS 800 team at Bracknell was low, and we didn't seem to be making much progress towards completing the reprogramming of the controller for the Bracknell version of the General Enquiry Program. In fact at one point we became stuck and couldn't seem to get any further. It was at this point that Phil Bath spotted in the paper a competition sponsored by CocaCola, in which the aim was to generate as many valid English words as possible from the letters in a given string. It took him only a short time to write a program to make the CAFS controller generate all the possible complete and partial anagrams from the starter string. Then with a small armfull of printout we all trooped off to the Bracknell library and started checking. We didn't win the competition (weakness in the eliminator slogan, probably), but we all felt much better as a team.

Sweet harmony

The CAFS 800 controller had one of the best music-generator programs ever and the one in the basement of the machine hall at Bracknell was set up so that if the associated 1903 ever went down, the controller instantly went into music mode. It was part way through its splendid repertoire of steamboat calliope tunes when the visiting delegation from the European Commission was brought round. They were bemused.

First Visits - 1, 1981   **Rick Smith**

Rob Wilmott was being shown round Stevenage on his first visit there. During the tour, whether by accident or design, he happened to kick a System 25 smartly in the covers.

"Look!", said his host proudly, "Isn't that great ? The cover isn't even marked!"

"Yes", rejoined Rob, "The bloody tin's too thick".

First Visits - 2, 1981   *H.C.*

Rob Wilmott was due at 1/3 Factory, Letchworth, for an early morning inspection. Doug McClymont therefore ensured that he and his direct reports were all on parade, in best bib and tucker, well before their normal time and certainly well before the time when Rob was due to arrive. They took up their positions in Reception.

Time passed.

When questions were beginning to be raised, the great man joined them. But he came into Reception *from behind*, having arrived even earlier and having completed his inspection of the factory without the planned escort.

But why hadn't the men in the Security Lodge warned Doug ?

Convention   **Rick Smith**

The Sales Training course for new salesmen laid tremendous stress on the importance of personal image in representatives of the Company; so no dark glasses, no beards, etc. By day two of the course any such abhorrent items had disappeared. On the last day the new head of Sales and Marketing appeared to give the final talk, and what had he got ? Beard, dark glasses - the lot ! He was a chap called Bonfield.

New Zealand - 9   **Andrew Mason**

Later on we started to do a lot of work in Defence, and around the same time we went through a phase of sales courses which emphasised the importance of seeking a "win-win" with one's customers. One of our Defence installations was proving very awkward to deal with, and at a review meeting the salesman was bemoaning their inability to appreciate "win-win". "Look", said Ross Mitchell, our Customer Service manager (himself an ex-RNZN Commander), "the Defence version of win-win is 'I win, you die'". We learnt a lot from that.

New Zealand - 10   **Andrew Mason**

Another customer service tale. One day one of our engineers fielded a call from a clearly irate customer who had called the help desk. The problem turned out to concern a printer, but not one with which the ICL engineer was familiar. His questioning, of course, only got the caller more upset. Finally the engineer said "would you mind telling me what it says on the name plate on the front of the printer?" "F…ing IBM" came the reply. Our quick-witted engineer waited for an appropriate moment and then said "Well, if you feel like that, why don't you piss off to ICL?" and hung up.

Despondent in Slough   **Dick Goodwin**

ICL's Estates Department seemed to have a real genius for selecting buildings that were virtually inaccessible in the rush hour, when most normal people needed to get to them, and were provided with woefully inadequate parking, despite public transport being wholly irrelevant for most of the people who would work there.

ICL SLH01 and SLH06 both meet this description very accurately.

One morning, after a trouble-free run along the M4 followed by a desperately frustrating crawl along the inadequate access roads through the outskirts of Slough, I eventually arrived at Reception in a state of high blood pressure and fuming temper. "Just look at the time !" I bellowed for anyone to hear; "I've just got here, and I've been in Slough for thirty minutes !" The lady behind the counter looked up with what I felt was insufficient pity and simply said : "I've been here thirty years".

No harm in it; just a bit of fun, really   **M. Brown**

When I was working at BRA02 we got a contract to repair some NHS equipment. Among the equipment were some heart monitors, and Bob Spleenbender just happened to have a manual with the source code of the operating system of these monitors (as you do). So we programmed them to work OK most of the time, but on April 1st we set them to do the flat line thing with the continuous tone, you know, the one that goes "BLOOOOOOOOOOOOOOOOOOOOOOOOOO". We had many a good chortle over that one, and could only imagine the confusion as they used those zapper things on the patients. You just don't get good quality laughs like that any more, especially with all this new fangled Health and Safety business.

In Harm's Way   **M. Brown**

A few years back I was seconded to ICL's El Salvador offices where they were installing a new Team Server for the then Dictatorship. We were just on our way back from El Pubo when we got caught in some cross-fire. It seems that the local rebel forces, financed by the "Yankee scum government" (the dictator's words, not mine), had decided that it was time to oust the government. So there we were in my Vauxhall Astra van in lovely camouflage colours, taking the brunt of the fire from both sides. It's amazing what those cars can take. Vauxhall should be proud that their engine block can deflect a 33mm anti-tank round at 200 feet. Mind you, after that I could never get the air conditioning to work. Eventually we were able to negotiate a very good deal for the rebels, and they now get a minimum of twenty hours a week on the system with full Internet access. I've still got somewhere the AK47 assault rifle they presented me with as a token of their gratitude.

Stereotype   **Emma Chittenden**

I was talking to a customer in Ireland and advised him to dial the speaking clock with his modem to check that it was working OK, and then to phone back the help desk. Upon phoning back he explained to the TSA that he phoned the speaking clock and it worked OK. He also asked if he was supposed to speak to the person on the other end as I hadn't told him what to do. He said the clock kept on telling him the time and he wasn't sure if he should tell it that he didn't need to know the time as he already knew it.

Is it Rair ?   **1982**   **Henk van der Vegt**

In 1982 ICL decided to enter the PC business. An agreement was made with the Rair company to adapt their 'black box' PC and bring it out as the ICL multi-user PC - in ICL colours, of course. Later this was marketed as the ICL PC Quattro.

Representatives from many countries had to assemble for a whole week in the Holiday Inn in West Drayton to discuss the market, the product, the pricing and product positioning, the sales channels, (including the new Traderpoint dealer channel), the operating system, the launch and promotion programmes, and much more. We were even allowed to touch the show models on display.

Because Rair had some quite good market visibility in a number of countries one UK colleague was concerned. "What should I say if they ask me 'Is it Rair?'" Well I could give him the right answer to that straight away, and said : "If they ask you that question just say : 'No, it isn't rare, it's well done by ICL'". There were no further questions.

Charming the Chairman, c. 1982   **Gavin Kirkpatrick**

One of the regular duties of the Headquarters Operation Personnel Manager was to discuss and secure a salary review recommendation from the Chairman in respect of his Secretary's salary. One day I received a phone call from Alison Service, early in her time as Secretary to Sir Christophor Laidlaw, asking me to go and see him.

"What's it about ?" I said to Alison.
"Well", she replied, " I'm not supposed to know, but I think it may be about my salary."

We made an early appointment for me to see the great man, almost though not quite the first time I met him. (He was nicknamed *The Longer Knight*, compared to *The Shorter Knight*, Sir Michael Edwardes.) Before going up I quickly boned up on Alison's salary history and other matters which might be relevant. In those days, what with pay pauses imposed by legislation and pay freezes caused by the parlous state of ICL's finances, the whole business of salaries and salary policy had become a bit of a black art, and involved a lot of complexity.

"What does Alison get paid ?" demanded Sir Christophor.

Taking a deep breath, I started to answer his question in several parts, with Alison's basic salary first, at which he immediately interjected : "Ridiculous ! Do you mean to tell me that that is all the Company pays the Chairman's Secretary ?"

"No, no", I went on, "She also receives an Inner London Allowance of so and so".

"An *Inner* London Allowance, do you mean to tell me, for working in *Putney* ?"

Becoming slightly exasperated, I thought I must continue and get to the end without any more interruptions, so with as firm a voice as I could muster I proceeded : "Chairman, what you have got to understand is .... " Then I caught myself and started again : "Chairman, forgive me, but what I would like you to understand .... "

"Ah", he purred, "I did so much prefer the second way you phrased your further explanation."

At which we both collapsed laughing. Alison gained a generous and much deserved salary raise. Thereafter Sir Christophor was always charming to me and easily approached on any issue where I was involved.

Culture Clash, c. 1982

ICL was negotiating with Fujitsu. The subject was the proposed Japanese manufacture of chips of British design which, as we all know, eventually turned out to be mutually beneficial. British experience was that a proportion of the chips on a wafer would be faulty and would have to be discarded. And Marketing had dreamed up the crafty dodge of embedding such chips in solid clear plastic and using them as giveaways. Obviously it would be a good idea to continue such a sensible way of exploiting the production failures.

However, it proved a stumbling block. Japanese manufacturing experience didn't encompass a comparable chip failure rate, and their negotiators couldn't understand what these weird Brits were on about. At last the penny - or perhaps the yen - dropped : "Ah so ! We understand. You want us to make some chips that don't work !"   But you could almost see the think-bubbles coming out of their heads saying : "These British are crazy".

A glass of water   Henk van der Vegt

David Mills and I were already friends before I joined European HQ in Putney. We had met several times at various international meetings and in 1983 became colleagues reporting to the same boss. When EDHQ moved to LON11 we found ourselves in adjacent offices, divided only by a kind of upmarket cardboard, which offered precious little insulation against the sounds from next door.

One afternoon, on my return from lunch, I noticed that David was having his French lesson and from my office I could easily hear his desperate attempts to get to grips with French pronunciation. In fact the sound I heard was quite alarming, something terrible must be going on next door. So I grabbed a glass, ran to the toilet (*Yes, I know that on the 11th floor it was a Ladies, but this was an emergency*), filled the glass with water, ran back to David's office, and said to the teacher : "Madame, voici un verre d'eau pour le pauvre Monsieur Mills". She asked in surprise : "Mais pourquoi ?", and I replied : "Parce que Monsieur Mills est très très malade." The teacher protested : "Il n'est pas malade, Monsieur!", but I said : "Oui, Madame", and reproduced the horrible noises I had heard from my office.

It was then that David reacted - in vigorous English : "Piss off, you bloody foreigner!" I took the glass with me.

That's an Order   Henk van der Vegt

When Doug Comish was European Director he did his utmost to Europeanise his division. As one result I joined his marketing department at the end of 1983, and shortly thereafter colleagues from Austria and Germany came to work in Putney as well. Another was his ruling that all of the marketing and management staff had to speak at least one continental European language; to this end a German teacher and a French teacher visited EDHQ regularly to teach their language

to ED staff. Mr Comish himself was a big example to his staff and when you visited his office a lot of French words could always be seen on the flipchart.

One day I had to accompany Doug to the headquartes of ICL France, which at that time was situated in the centre of Paris. After landing at Charles de Gaulle airport we boarded a taxi and Doug told the driver - in English - where to go. As usual in Paris, the driver only spoke French and pretended not to have understood Doug's orders. Doug said to me : "Henk, you tell him where to go", but I responded : "Doug, this is an excellent opportunity to practice the French from your lessons." My boss was not amused. He looked at me and said in a loud voice : "Henk, you tell him where to go and THAT'S AN ORDER". What else could I do but turn to the driver and say : "Chauffeur! Cours Albert Premier, s'il vous plait". As the car drove off Doug said : "There, I knew you could do it".

The lowing herd bleeps slowly down the line   Chris Horrobin

When CPS was formed, (the organisation of ICL part-time home workers), not all of them were the proverbial 'pregnant programmers'. One chap was also a dairy farmer in the depths of Wales. This was in the days of slow mechanical Teletype terminals, and long distance calls still had to be manually connected by the operator at the village post office. He had a lot of trouble persuading her not to keep disconnecting his long distance calls because of 'funny noises on the line'.

Naturism and human nature   John Smaldon

In the early '80s the Ontario Nurses' Association had a 2903 installation which in the summer months received the most attentive service ever. The reason was that the ONA's ofices overlooked a Toronto women's club which had a swimming pool on the roof and some of the members were wont to sunbathe in the nude. Toronto almost had its own version of the Tower of Pisa.

The Paul Daniels touch   Richard Dowdeswell

Episode 1 : It was at that stage of chasing after lost business known as 'pissing on the ashes' but, nevertheless, it was a very distinguished gaggle of very senior RAF officers who assembled in the board room at Carlton Gardens. The funereal proceedings were conducted by Ninian Eadie.

About that time I had developed an illustration of the value of CAFS using two packs of playing cards, one shuffled, and one pre-sorted so that all the aces were together, then all the ones, etc. The packs would be handed to two of the punters, who would be instructed to find, on command, particular named cards. The man with the sorted pack would find the target very quickly indeed; the man who had to search through the shuffled lot would be a long way behind. Only three tries, or four at most, were sufficient to make the point that, if you haven't got a suitable index, searching is a long and tiresome business - unless you've got a CAFS machine to do it for you.

I placed the packs in front of the two officers I had selected. The one with the sorted pack picked it up, and his hands were obviously poised to shuffle them. "Don't shuffle those cards!" I bellowed in my best sergeant-major manner, and this frightfully senior officer cringed, quivering, into the back of his chair. Well, I did say the business was lost anyway.

Episode 2 : Ninian and I were in a street in Pretoria, on our way to a presentation to SAPO, the South African Post Office. "I'm just going to pop over to that shop and get some cards", I said. "You're not going to do that awful trick again, are you ? No, you mustn't. I absolutely forbid it", said Ninian who, after all, was my boss.

The introductions were in Afrikaans, and goodness knows what was said in them, but the meeting started off in a decidedly hostile and sticky mood. From the far end of a long long narrow table Ninian eyed me with gloomy suspicion. I decided there was nothing more to lose, and took out my cards. There was the first quickening of interest. "I'm a bit concerned about showing you this demonstration", I said. "In fact my boss has categorically forbidden me to do it for you, (*pause*), because the last time I did it, (*long pause*), we lost the order !" There was a burst of laughter all round, and the meeting was transformed.

An Evil Sense of Humour   Keith Crook

Visiting International Division one day I overheard a brief over-coffee conversation between Dave Tipping and Rosemary Dean :

DT : "How's your new car?"
RD : "Well, somebody slid into the back of me last week"
DT : "That must have been nice for you. How's your new car?"

A Dutch DAP squib   Richard Dean

I went over to Holland on one occasion to take part in a seminar for Dutch Universities on the virtues of parallel processing, as exemplified at that time by ICL's Distributed Array Processor. They were all politely interested, but only too obviously none of them were enthusiastic. It turned out that the turn-off was a matter of language : DAP was driven in the specially adapted DAP-Fortran, whereas Holland, as a country which specialised in ALGOL, was virtually Fortran-free. "Oh all right", said the desperate salesman, "I'll give a free DAP to any university that will write a DAP-ALGOL compiler." Nobody took the bait.

The Dark Continent   Peter Hall

I had urgently to go to South Africa. The trip was set up at short notice, and the earliest available flight involved a couple of nights on the way in Nairobi. A telex was sent to the office of ICL Kenya requesting a car to meet me at the airport and a hotel room.

On arrival at Nairobi airport I was called over the public address system to go to a special desk where I was singled out for VIP treatment and led straight through immigration and customs. As I marched past the long and slowly-moving queue I received some very envious looks. When I was deposited in the exit area I naturally expected to be met by an ICL man, but no-one was there. I had to wait, looking foolish, while all the other passengers, whom I had queue-jumped, passed by with superior and mocking looks.

It transpired that no-one had got my telex. It was a bank holiday and the office was shut. I had quite a time finding somewhere to sleep.

Darkness on another Continent   Peter Hall

I went to Australia to give the keynote speech at an International Computer Conference. ICL also asked me to give a lecture to an important society. As often happened, my talks were to be on subjects which I knew little about, but I had done a lot of work on them and, in particular, I had produced a good set of slides for each.

Imagine my horror, therefore, when as I checked my slides on the morning of the keynote speech I found that I had two sets for the other speech and none at all for that morning's speech. I'm afraid I let myself and the company down that day.

CAFS demo at The White House, Stevenage   Chris Taper

All the main internal commercial files - the Machine Population, Orders Database (ODB), Machine Index, Trading Directory - had been merged to provide instant answers to questions like : "How many 2094s are there on 5 year lease in Northern Region ?" The idea was that this would enable marketeers to focus on ME29 sales prospects like never before. Taper presses button, 30 seconds later an impressive list of customer names, addresses, and dates appears and John Lillywhite - Mr Finance - comments : "That is still crap in and crap out, but I agree it seems that much faster"

Another bit of hurtful truth   Chris Taper

The scene : the LON11 Restaurant
The dramatis personae : Chris Taper & John Lillywhite
The Subject : Company Management Reporting Project - discussion on project budget...

JL - "The trouble with you IS people is that you charge us for entering data, charge us for processing the data, and what's more you charge us for getting the information out"

CT - "Yes"

A Lousy Question   Henk van der Vegt

When the STC merger took place not only did we lose half a Saturday for the management information meeting at the Barbican but also I was one of the many ICL employees bundled out of the office and onto a coach for the drive to the Wembley conference centre. I was less than pleased at this outing; I had a lot to do in the office.

Anyway, I found a seat at the back of the balcony and sat through the film presentations about STC, their products and services. After that Peter Bonfield gave a presentation about the advantages of the merger: information technology and data communication technology at last coming together. After this there was a question and answer session, with a well-known BBC presenter running round with a microphone asking people : "Do you have a question for Mr Bonfield ?"

When he came onto the balcony I was one of his victims. During all the presentations and in all the publications I had looked in vain for information about the advantages of this merger for our international markets. I found STC culture so "British". So, hidden in the crowd, I said : "Yes, I would like to hear more about the international aspects of this merger". Peter responded by telling us how much of the turnover was from outside the UK, and expressed his confidence in

the growth of the non-UK revenues.

A couple of weeks later I was one of the speakers at the ICL European Trader conference at the Anugraha Conference Centre near Egham - (weird building, weird name). Before the meeting, and while we were waiting for the audience, I was sitting in the front row with some of the other speakers when Peter Bonfield entered and passed us with a firm : "Good morning". Just a few steps further on he stopped, turned back and looked at me, saying : "No lousy questions for me today, Henk ?" He must have seen my surprise, because there was a big smile on his face as he turned round and walked to the speaker's lectern.

The British Empire   **Henk van der Vegt**

The success of the Netherlands wholesale cash and carry system attracted attention from the UK. One day I was called by a Dataskil colleague from their HQ in Feltham: he told me that he was impressed by our success, and could he please come over to Amsterdam to get some more information, as Dataskil might be interested in the package for introduction in other countries as well.

Of course he was welcome and I received him in my office and gave him a full explanation of the market, pointing out that the reason for our success was the application we had obtained from a software house in Heidelberg. To obtain marketing rights for the application he would have to talk to them. His next question was whether I would be prepared to introduce him to the people in Heidelberg. I gave him the date of my next appointment with them and in the event we went to see them together.

In Heidelberg he got a full explanation about the set up of the package, the back up facilities, the ease of operation, and all the rest of it. My Feltham friend made lots of notes and it was obvious that he was very impressed. He asked whether Dataskil could get marketing rights for other countries, and in response the management of the software house said that they were certainly interested in a partnership and would he please supply a written proposal stating which countries he had in mind. This was agreed.

Three weeks later I was called by my Heidelberg friends who told me that they had received a proposal from Feltham, but there was one sentence which they couldn't understand; could I possibly help them ? I asked them what the problem was. "Well", my German friend said : "Dataskil asks for the marketing rights in Great Britain and her Commonwealth. What the hell is that 'Commonwealth' ?" I replied that I wasn't sure what it was exactly but I was certain that it covered Trinidad and Tobago. It never came to an agreement.

Misunderstanding, mischief, and misrepresentation   **Dik Leatherdale**

A senior strategist was asked to give a talk to the Mainframe User Group at the London Zoo on his work with international standards bodies. At the end of the presentation, a customer who had actually been using the software under discussion asked a question as to whether the software could be made to act in a certain way. I suspect he knew it couldn't and was making a point. A totally correct but somewhat unhelpful answer was given - "Yes and no" - yes we could make it do that but, um, no we hadn't.

I thought the matter through and decided that I could do better. At the next meeting I arranged

for the question to be asked again. I was delighted to see that a photographer had been deputed to record the occasion and that the chairman was furiously taking notes. I had but two OHP slides. The first repeated the question. Anticipating some objection on the grounds of taste, my second slide read "ICL would like to apologise for the bad taste inherent in this demonstration and for any offence it may cause". I thought it might get a laugh. It did.

There followed a demonstration using handpicked members of the audience. Stuffed rabbits were produced from a top hat and passed around as messages might be passed around the system. File transfer was demonstrated by a delegate unwinding a toilet roll - "this file contains fixed length records. This one [rip] bears the text NOW WASH YOUR HANDS". The point was made that, with a little thought, the required effect could indeed be produced.

The users loved it. They roared their approval. I sat down feeling rather pleased with myself.

A few weeks later the User Group published their account of the meeting in a newsletter. Of my carefully crafted demonstration nothing survived. A photograph of my apology slide was included, however, and with it the caption "ICL get their PR right at last". Oh dear.

Managing scarce resources   Dik Leatherdale

We shared an office with Chris Cheetham. The phone rang constantly with calls appealing for Chris's help. He hadn't a hope in hell of dealing with more than a few. Eventually we stopped taking messages - "Send him a telex" was my standard response. When he was actually in the office, however, he dealt with the problem by answering the phone in a Yorkshire accent. If it was someone he didn't want to speak to he would reply "Sorry he's out. No, I don't know where he is". Otherwise he would say, "I'll go and get him". There would be a pause and then he would start talking in his normal voice as if nothing had happened.

The Height of Cleanliness   Rick Smith

H.M. Customs and Excise decreed that there was to be a one-off blitz of cleaning, a proper royal visit job, in the Southend machine room. Contractors were to be brought in specially, and the whole weekend would be dedicated to the exercise.

On Monday morning it had been duly completed, and everything was spotless - except for the contractors' footmarks *on the top of the machines*, where they had climbed up to get at the ceiling.

The convenience of arson   Paul Rappaport

It is said that, at the time of the fire in the computer room at Cairo University, the installation manager was a cousin of the ICL salesman, and another cousin was involved on the financial approval side. But of course none of us would say in any court of law that we really believed that to be true. Anyway, the provision of a new ICL mainframe was thoroughly beneficial all round.

The convenience of enemy action   Paul Rappaport

The INDEPOL service at RNSTS proved a jolly good way of keeping control of the Royal Navy's stores. But before it came on stream there were a number of long standing queries about apparently missing items. All of these were providentially explained when the Atlantic Conveyor

met its pair of Exocets and went down to the bottom of the South Atlantic. That only leaves the irremediably sceptical to worry about why she was apparently loaded to several times her maximum capacity.

The convenience of accident   Paul Rappaport

When the Donnington stores depot went up in flames, it didn't half help to sort out all the outstanding stores balance discrepancies. After that, they could always blame IDMSX.

Squelch

The press conference had been going fairly well on the whole, apart from one particularly obnoxious journalist who would persist in interrupting with irrelevances, and who seemed much more inclined to talk himself than to listen to the information that he was being given. Finally, while Peter Ellis was in the middle of his presentation, this fellow piped up with an especially inappropriate remark. Exasperated far beyond his habitual equanimity, and to save Peter from further embarrassment, David Marwood stood up from the top table and, glaring down from his full Guards regiment height at the unfortunate pipsqueak, said in a voice of thunder : "How dare you interrupt with such a foolish question at such an important moment ?" And all the other journalists cheered !

A Good Joke   Henk van der Vegt

The relationship between the ICL sales operations and the ICL software company was not always ideal. When a Dataskil manager visited Sweden to address a number of ICL customers he said to his Swedish ICL host : "I always like to start my presentations with a good joke to break the ice. Can you please tell me what kind of jokes they like here ?" The answer of the Swede was short : "Just show them your price list".

Who makes the coffee ?   Henk van der Vegt

In 1984 the home of European Marketing was on the 11th floor of ICL House, Putney. There was a nice coffee machine in our secretary's office so that we could make our own. There was even a golden rule on a notice on the wall: 'Whoever gets in first makes the coffee'.

However, as a continental European I wasn't very impressed by the wishy-washy brew which my English colleagues produced. One morning I arrived first and realised this was the opportunity to show the Brits how *real* coffee should be made. I filled the machine with water and then, instead of the conventional single bag, I tipped two bags into the filter and switched on. Ten minutes later I filled my mug and went back to my desk, savouring the rich aroma of a proper cup of strong and honest coffee.

I was in a happy mood as I heard the first colleague arrive. A few moments later there was a shout: 'Who made this bloody coffee?' Coming out of my office I saw an irate Mike Keith. 'Morning, Mike', I said; 'Strong coffee for strong men'. But I don't think he took my point.

That very day the golden rule was modified: 'Whoever gets in first makes the coffee - EXCEPT HENK'.

Late Delivery, 1984   **Henk van der Vegt**

ICL Portugal had booked a large DRS order for a governmental institution, but had to ask for help from European Office Systems Marketing because the agreed delivery time for the systems was already passed and they still hadn't received a shipping date from the factory. Product Manager Dave Tipping in Putney made a lot of phone calls and sent a lot of telexes, and at last was able to make the systems available for shipment to Portugal.

The account manager was relieved to be able to inform his contact at the ministry that his new systems were on their way, and that a lorry would bring them straight from the airport to the customer site.

But his troubles weren't over, because at a railway crossing it was proved once again that a train is much stronger than a lorry, and both the road and the railway track ended up littered with bits of lorry and fragments - oh, many fragments - of DRS systems and peripherals. The account manager was very nervous when he rang the ministry; would they accept this as a valid excuse for further lateness in delivery ?

But the customer was already fully informed. "Didn't you watch the TV news last night ?", he asked the account manager. There had been full coverage of the accident, mentioning the brand of the systems and their destination. *Of course* it was accepted that ICL needed some more time for a new supply. And the account manager ended up happy because, with the first shipment covered by insurance, he could book a complete new order.

Fish Highly Recommended, 1984   **Henk van der Vegt**

We left for Lisbon to attend a country review meeting. 'We' were : Doug Comish, European Director; Richard Livesey-Haworth, regional manager Europe South and European Institutions; and I was asked to join them because DRS20 was a major product line for ICL Portugal. Also with us was Rob Gordon, who was to assist the Portuguese in preparing a major account proposal. A visit to Lisbon was always a pleasure, because our Portuguese colleagues were positive, successful, and part of a very profitable company.

In the taxi from the airport to the office Doug told us that he had invited the Portuguese senior staff out to dinner, and prompted us : 'Could you gentlemen take care that we mix with the Portuguese at the table'.

That evening in the restaurant the waiter came to take our orders for the main course. Doug asked the Portuguese general manager : 'José, what do you recommend?' In reply to that question José Pina started a talk about fish as excellent food in general, the high quality of fish caught by Portuguese fishermen in particular and, as a clincher, the superb way of preparing fish in this restaurant. It was clear : our main courses would be chosen from the FISH section of the menu. José accompanied the waiter round the table, explaining the ins and outs of the various options. When the round was completed the waiter asked José : "And for you, sir ?" His short answer amused me, because I knew that the Portuguese word 'carne' meant meat.

When the main course was served I watched Doug's face as José's plate was put in front of him; it was a picture ! But José didn't notice anything out of the ordinary. He just said "Enjoy your meal" and began to cut his tournedos.

Shock Treatment   H.C.

It was one of the very few times when we have been to Covent Garden, and this was only due to the generosity of Alan Roussel who passed on to us the tickets which he was unable to use himself. So we found ourselves in about the third row of the stalls - magnificent seats - and in distinguished company: reading from left to right you would have seen me, my wife, Michael Edwardes, and Mrs Edwardes.

The opera was Weber's '*Die Freischutz*', the embodiment of Germanic folk mythology, with shots, thunderstorms, splitting graves, and other deafening events - and that's quite apart from the noises made by the singers. As each successive detonation occurred my nervous wife started more violently in her seat until, at some fortissimo climactic moment, she put her left hand on my knee, her right on Michael Edwardes's, and thrust herself a good six inches into the air.

It was the only thing, throughout the performance, that stopped M.E. writing notes all over his programme about what he was going to do to ICL the following day.

Bats and other wildlife   Graham Budd

The staff at the Putney SSC were not a happy bunch; indeed they were on the cusp between stroppy and downright mutinous. This was primarily because their London weighting had been arbitrarily and suddenly stopped. Then they were told without preamble that they were also taking on support for BMEEP. In that case they'd have to have another person to tackle it, they protested, but to no avail. As a substitute, someone acquired a large plastic bat and hung it prominently from the ceiling. It seemed appropriate, because the 'beep' it emitted when squeezed seemed fairly close to the BMEEP for which it was nominally responsible.

John Proctor came to Putney to be nearer the seats of power and took, as the only available space, a corner office on the SSC floor. He didn't think much of the SSC people, (which they reciprocated), and he took a dislike to the bat. He disliked it physically, musically, and aesthetically, and most of all he disliked the attitude it symbolised, and one weekend when no-one else was about he abolished it.

At the first opportunity a search party was formed and went through the building in a controlled rampage, asking everyone - up to and including Robb Wilmot - "Have you got our bat ?". Three times John denied that he knew anything about it, but it was not long before it was discovered stuffed into a drawer in his office, and formally reinstated.

Some time later, when John visited Sweden, three members of the Putney SSC were on secondment working in Stockholm. At lunchtime they went out to a jokeshop, bought three bats, and hung them in the corridor where they were working. Despite his remit to inspect the whole operation, John for some reason altogether declined to visit the batted floor.

Team Building - a frank approach

John Proctor was appointed to take change of a number of departments which had not previously worked together. Putting it mildly, they did not form a unified team. John decided on a management team building meeting at an hotel in the country over a weekend. Various activities were laid on with a view to getting everybody to work in harmony. At one point delegates were

asked to write down on a sheet of paper what they thought of John Proctor and to hand them to the boss who had to read them out. The fact that they were to be unsigned did not seem to have much effect, as the delegates had worked hard to achieve their middle management positions and weren't going to jeopardise a lifetime's work by undue frankness.

Various comments of an anodyne, not to say obsequious nature were read out. Towards the end JP hesitated. He glared at the audience and pronounced "There's somebody here... who thinks I'm vindictive!". "No, that can't be right" responded John Heeney straight away, "There's nobody left in ICL who thinks you're vindictive". John Heeney denies planting the offending comment.

Chris Cheetham   **Dik Leatherdale**

For some years I had the pleasure of being managed by the person Richard Dean always referred to as "The gallant Cheetham". I'm not sure Chris quite saw it that way though. When annual objectives were introduced into our part of ICL, Chris finished my appraisal by telling me "Your objectives for the next year are to find out what needs to be done and get on with it". I was never again given such clear or appropriate objectives for it did indeed describe the totality of what it was we were supposed to be doing. One wonders if Chris ever got the hang of objective setting. I do hope not.

Down the (well-managed) plughole   **Dik Leatherdale**

A new manager was appointed to take over our team of fifteen souls. His instructions were to reduce the headcount by four. Just to make it more difficult, there was no money for redundancy. We had been previously managed by Richard Dean, so the comparison was not really fair, but we swiftly concluded that this new man wasn't up to much. We left in droves. Subsequently we wondered whether our new manager might have misheard his instructions - when the headcount dropped *to* four.

The Simpson truth   **Dik Leatherdale**

During the brief dictatorship of Chairman Michael Edwardes, psychometric testing of senior staff was introduced at his behest. Peter Simpson, who by this time was very close to a well-deserved retirement is reputed to have answered the question "Are you ambitious?" by responding "Not any more".

OPD - What the Company said about it   **Liz Tebbit**

"The ONE PER DESK is a versatile and powerful personal workstation specially designed to aid the communication essential for successful business. Its flexibility makes it suitable for both business and home use. The ICL OPD carries out a variety of tasks for which you would normally need several pieces of equipment. It includes :

- An advanced telephone with comprehensive facilities, including Telephone and Computer Services Directories, automatic answering, and call timing and charging.

- A personal computer with built-in display and two microdrives for storage. The BASIC programming language is provided and a set of four business applications (Xchange) is offered as an option.

- An information terminal. The OPD allows you to retrieve and amend information from a variety of computer services including British Telecom's Prestel Viewdata service."

That was an extract form the 'ICL ONE PER DESK Handbook' written in 1984 by Judy McIntosh Shand of the ICL Publications Centre.

OPD - What others said about it   Liz Tebbitt

In 1984 I was on an ICL visit to MIT in Boston, having at that time some involvement with the versatile OPD. I well remember Mike Hammer's comment : "Hmmmm. For a telephone it makes a very good computer; for a computer it makes a very good telephone."

OPD - Translated into plain language   Liz Tebbit

The One Per Desk was the brainchild of Robb Wilmot and his pal Sir Clive Sinclair. (I once sat next to him at a conference in Glasgow, and recall that he made many notes during the session on optical computing.) It was indeed the first telephone cum personal computer. It came in two variants: with either a black and white or colour monitor. The black and white monitor was quite a dinky affair and slotted neatly above the telephone handset/keyboard cum processor. The colour VDU was pretty bulky, but at least the characters on the screen were larger and easier to read.

The keyboard contained the notorious microdrives of Sinclair Spectrum fame. These were always sticking, and so hardly a reliable backup for one's valuable data.

One could also set an auto-answerphone message in a robotic voice, which had a limited 'office' vocabulary of about one hundred words. An example message suggested in the above Handbook was : "I am out of the office at the moment. Please leave a message with my secretary on 2-1-8-9. Thankyou for call_ing. Goodbye." This automaton voice could be pretty unnerving for the caller, especially if the OPD owner was male and had set the message in a female register !

Moment bitte, Ich habe ein frage   1985   Henk van der Vegt

In 1985 the IT Director of an Austrian bank came to England to be briefed on the DRS 300 which ICL was going to launch later in the year. All the predisclosure procedures had been followed, and secrecy undertakings had been signed by this important customer. The bank already had a lot of PC Quattros installed at customer sites, but now they needed systems with greater capacity for their larger customers. The general manager of ICL Austria expected that the new DRS 300 would be the right solution in this case and arranged the visit.

As European marketing manager for Office Systems I acted as host after their arrival. I knew the area they came from very well because our family had spent the last eight summer holidays in a lakeside hotel over there, and we already had a booking to go again in August. So before I drove to the hotel in the morning to pick them up I strategically placed in my car a brochure about their very own part of Austria. The Herr Direktor had brought two of his assistants with him; they got into the back with the ICL general manager, and the main guest took the front seat.

The brochure had immediate effect. "Have you been there ?" "Yes, often", I replied, and told him about the hotel I used every summer, mentioning that I used his local branch office to change

money. "And because we have been there so often your lady at the counter doesn't need to see our passports".

The conversation switched from English into German, and to the astonishment of my Austrian colleague the Herr Direktor said : "Ich bin Dietmar". "Angenehm", I replied, "Ich bin Henk". Austrians are normally very reserved as far as first names are concerned, so obviously we were getting on quite well.

After arrival at Bracknell a member of the DRS Business Centre staff presented the ins and outs of the new DRS 300 to our guests. Market developments, requirements answered by DRS 300, technical specifications, operating systems, portability of applications, workstation connections and more subjects were all covered by the speaker.

Dietmar followed the talks with great interest, and every now and then he stopped the speaker by saying : "Moment bitte, Ich habe ein frage" ("Just a moment, please, I have a question") He posed the question to me in German, and I translated it into English for the speaker. But after a certain point Dietmar started asking his own questions in English, showing that he was completely fluent in the language. I was puzzled.

During the lunch I tackled him : "Dietmar, why did I have to translate your questions at first, when later on you asked your questions for yourself in English ?" He looked at me and said : "Listen, Henk, I was ashamed of my foreign accent, but after I heard the English of that speaker with the red hair I knew that my English isn't all that bad". I got the point. Yes, when Elfed was speaking you heard the genuine Welshman.

In the evening my wife and I took the guests out in the West End of London and we had a very pleasant time. In due course Dietmar returned the favour because, when I went to the bank in my holiday village to change money, the lady behind the counter looked at me and said "A moment, please". Then she handed me the telephone and I heard Dietmar at the other end, inviting my wife and me for lunch. That lunch was one of the longest and best I ever experienced, at a marvellous restaurant on the lakeside.

But the bank never bought DRS 300.

I didn't discover why until 1993, when my wife and I were waiting at Cape Town airport to board the SAA flight to Amsterdam via Frankfurt. "Look, Henk", she said, "We know that man; it's Dietmar". I wasn't sure, but she was convinced, and told me that if I didn't speak to him she would. So I went up to him and asked : "Are you an Austrian ?" "Ja", he said. "Are you from .... ?", and I mentioned the city where we had last met him. "Ja", he said again. "Then you must be Dietmar". He looked at me and said "Verdammt! Nochmahl du bist der Henk von ICL!"

And so after eight years he told me that shortly after our lunch at the lakeside he left the bank to start his own software company, successfully selling a specialised banking application. He was returning from a visit to one his customers, one of the large South African banks.

Foreign keyboards   **Henk van der Vegt**

In autumn 1985 I invited representatives from all the continental European countries to England for a pre-launch DRS 300 meeting. A colleague from UK asked me whether he could attend the

meeting as well, and I allowed him to come - but only as a listener.

The meeting went quite well and at the end there was a question and answer session. To my surprise our UK guest raised his hand and asked : "Will the DRS 300 also be available with foreign keyboards ?" I was upset, because in those days ICL was trying hard to behave like an international company, and continental versions were no longer 'foreign' but 'national variants', and here was a silly question in front of an audience which was very touchy in this respect.

But Dave Tipping, my hardware product manager, gave the right answer by saying : "Yes, of course, when a Continental customer wants an English keyboard we will make one available to him". This was not the answer our guest expected and he persisted : "Yes, but I mean *foreign* keyboards". Without hesitation David answered : "Please realise that on the Continent the only foreign language is English".

There was a loud "Right between the eyes" from one of the representatives and then a big round of applause from all the Continentals.

A visit to Buckingham Palace   **H.C.**

The Master of the Household
has received Her Majesty's command to invite
Mr Hamish Carmichael
to a Reception to be given at Buckingham Palace
by The Queen and The Duke of Edinburgh
for Winners of The Queen's Awards for Export
and Technology in 1985
on Wednesday, 12th February, 1986, at 6 pm

We met on the afternoon of 12th February in the Gloucester Hotel in Earl's Court - 'we' being David Dace, Neil MacPhail and myself.

David had been my boss in Corporate Systems in the very early 1970s, at the time when the idea of CAFS was first being mooted. The Research Laboratory approached us to us whether, if they built such and such a machine, would we find it useful. David asked me for a quick evaluation of the idea, and it took only about five minutes to say : "Yes, please ! How soon can we have it?" He subsequently went on to become Director of Mainframe Systems, and so in due course acquired the responsibility for manufacturing CAFS in large numbers.

Neil MacPhail was the chief of the engineering team who took the concepts of CAFS, as demonstrated by the Stevenage prototypes and the resulting CAFS 800s, (which like many first-generation machines were about wardrobe-sized), and turned them into a product engineered in modern technology, with the resulting module closer in size to a shoe-box. Incidentally, his mother was a Carmichael, and his wife is a semi-professional genealogist, so we pursued the idea of cousinage; if we are related, the connection must predate 1700.

When the initial CAFS product was created, and it was decided to try it out under real conditions in some of the Company's own systems, I helped to get some of those early systems identified

and implemented. They proved so successful that they initiated a programme of presentations and seminars that went on for years, and which allowed me to talk to ICL customers and prospects all over the world about the benefits and wonders of CAFS. To further this I was seconded to the then Product Marketing Division, and eventually became CAFS Marketing Manager.

At a quarter past five Tony, the chauffeur from Putney, turned up with a Granada to take us to the great event. We arrived outside the Palace at half past for a rendezvous with a photographer, arranged so that *ICL News* could again put a good CAFS story on its front page. It was, however, getting dark by this time and we circumnavigated Queen Victoria twice before spotting him. Then we stood in a handsome threesome against the railings, while he fired off a dozen flashes. As this was going on, Tony was berated by one of the many police for parking outside the Palace. But that having been sorted out, we rounded Queen Victoria for a third time, and were waved by the police through the left hand gate in the front railings. But as soon as we swept in, it became apparent that we should have gone in by another gate, round the corner to the side of the Palace. But by this time there were two other limousines behind us, having made the same mistake, so it wasn't possible to retreat. We were therefore directed to drive across the entire forecourt of the Palace, scattering guardsmen en route, and out by the other gate. As we emerged from this the original policeman, who had watched it all, registered some displeasure at our unorthodox behaviour. Without stopping, Tony wound down his window and called out : "I'll get it right next time".

So, having made a fourth circuit of Queen Victoria, we at length got to the proper gate, and drove in to the porch. Here footmen in long scarlet ulsters stepped forward and opened the doors of the car. Up three carpeted steps, and two tall entrance doors were opened for us to be met by a pair of charming elderly gentlemen, in scarlet frock-coats, with black toppers and knee-breeches, buckled shoes and miniature medals, and gracious smiles. Unobtrusively, behind them and to the side, two security men scanned us for concealed knobkerries and kalashnikovs.

Then a long walk along a corridor that went disorientingly round a succession of corners, lined for much of its initial length with an impressionistic mural - I think it might have been by John Piper - showing the Palace railings and a cheering crowd, but *seen from the inside.* On the other side there was a succession of Dutch sea warfare paintings by one of the Van der Veldes. At one point the presentation cards which we had been instructed to bring with us were checked, and corresponding sticky labels were fastened, not on our lapels but high up on our left shoulders.

The route eventually brought us to the foot of a grand staircase, three successive flights of shallow steps, the whole about twenty feet wide. In opposing niches at its foot stood two life-size white alabaster or marble statues, one of the young Queen Victoria and the other of her beloved Prince Albert, incongruously dressed as a Roman legionary.

A final turn at the top of the stairs led us into a grand picture gallery, at least 100 feet long, in which the other guests were already gathering. In fact, of the 300 guests, about 270 were there in front of us. It was now about ten to six. Nothing seemed to happen for quite a long time, but the pictures ensured that there was plenty to look at. Mrs Thatcher came in, preceded and followed by flunkies. How badly she walks ! She scuttled along by the skirting-board like Chuchundra in Rikki-Tikki-Tavi, the muskrat who didn't dare to come out into the middle of the room.

It gradually became apparent that we were moving slowly forward. Half way along the gallery were a pair of easels, supporting printed lists of everybody who was there, in three sections :
- 	The Royal Family, the politicians, and members of the Awards Committee;
- 	Three representatives from each of the 100 companies who had won Awards;
- 	Members of the Royal Household, starting with the Countess of Airlie, and going on through Lieutenant-Commander Lord This and Flight Lieutenant the Honourable That to a few Mister Others.

Above these were the marvellous matched pair of Van Dyck portraits of Charles I, one showing him in armour on horseback and the other a family group on a garden seat with Henrietta Maria and their two children.

As we reached the far end of the gallery, the crowd ahead smoothly ordered itself into single file, and turned left to pass through a doorway into the adjacent reception room. Six feet short of the door a footman ensured that we all had our presentation cards in hand; just within the door a second footman took the card from each person in turn, made sure that it was the right way up, and passed it so to a third servant.

And here we were ! Just before each person reached the Queen his or her name was read out, and it was time to shake hands. She didn't say anything, but smiled slightly to each of us. She was wearing a paisley-patterned day dress in dark blue, with broad pink ribbon running down the outside of each arm from shoulder to wrist, and a two-row pearl necklace with diamonds. I was surprised to see how small she is - as though all pictures are taken by kneeling photographers.

Then on to the Duke of Edinburgh, standing three feet further on. His face was looking tanned but curiously mottled, as though parts of it had peeled from sunburn and then been burnt again. He leant forward to read our lapel badges and said jovially : "Well, is it ICI or ICL this time ? ... And what have you done ? A computer, presumably .... So what makes it so special ?" And without time for a reply, the movement of the line took us on first to the Duke of Gloucester and then to the Duke of Kent. G beamed but didn't speak. David Dace reminded K that he had visited us to open our Northern Education Centre two years previously. "Ah yes", he replied, "In Gorton". And as it happened that was the only Royal conversation we had during the evening.

By this time lots of other doors had been opened, and we could see that the original picture gallery was flanked on each side by a suite of three reception rooms. Into one of these we were unobtrusively marshalled: "Mr, Dace, will you and your party go into the Blue Room *and stay there"*. We were invited to have a drink. The buffet was already charged with labelled lines of glasses, soft drinks, whisky and water, gin and tonic, white wine, dry sherry, medium sherry, and so on.

When everybody had been received, the Royal party split up, going one to each room to talk to the guests. The Queen herself passed slowly through the room where we were, speaking to about one delegation in every three - and as it happened we were among those omitted. But we had every opportunity to observe her, and to see a vivacity, a ready smile and a quick laugh, which are entirely different from the serious face she always wears in public.

We also watched a long conversation between one delegation and Sir Robert Armstrong, the Cabinet Secretary, who was taking time off from the Defence Select Committee. He was conspicuously the shabbiest man there, his hair uncombed and needing a cut, his suit looking as though it had been slept in for a week, his shoes definitely not polished, a large roll of papers

sticking out of his right-hand jacket pocket, and so forth. Economical with the elegance, for a change.

Footmen in large numbers, wearing scarlet waistcoats and black midshipmen's bumfreezer jackets, came round in great numbers and with commendable frequency, bearing either trays of replacement drinks or salvers of elegant canapés.

I'm not competent to properly describe the magnificence of the setting - great tall rooms with vaulted plaster ceilings, brocaded silk hangings, oodles of gilding, Grinling Gibbon-style carvings, huge cabinets of either Chinoiserie, with much inlaid mother of pearl, or French with swaggering ormolu, giant Chinese or Japanese jars - nearly five feet tall, imperial wallpapers variously dark red or light green, light coloured carpets of sybaritic softness.

The organisation was smooth and impeccable; after all, they have been running such events for hundreds of years. Nothing ever happens for the first time or takes them by surprise. Any instructions were passed sotto voce by anonymous gentlemen with very good suits. Anybody looking lost was engaged in conversation by one of the ladies of the Household, distinguished by their wearing six-inch square patches of pink silk on the left shoulder as a background to an 'EiiR' brooch in silver and diamonds. When one somewhat elderly lady guest was taken rather faint after having been standing for so long, there appeared as if by magic first *two* armchairs - so that she and another lady could appear to be merely sitting in conversation, and she wouldn't be embarrassed by being the only person sitting down - then a nursing sister, and finally a wheelchair.

Towards eight o'clock, when we had been there for two hours, it became apparent that people were starting to trickle away, though the Queen was still circulating and still talking to the remaining guests. There didn't seem to be any hard and fast rule about how long one stayed or when one went. So, at an opportune moment, when it was obvious that we weren't going to see anything else, we slipped out and back down the grand staircase, and then by the same route back to the door where we had come in. At a point some sixty yards from the door was a notice : "Please call your car from here". David Dace produced the card on which his name and the details of his car had been entered, and the attendant soldier, speaking into a microphone, called for "The car for Mr Dace". We learned later that all the cars had been parked along the Mall, where there are small loudspeakers at frequent intervals. The timing is ideal : by the time one has completed the walk to the doors, the car is just gliding into the porch.

Then back to the Gloucester Hotel and dinner.

Definitely something to have done !

Another view of crime   **c 1986**   **H.C.**

It was a long long trek up to Inverness, and Barrie and Sue were both pretty fed up with my little car by the time we all got there. Besides, did we really stand any chance of selling INDEPOL to a little outfit like the Northern Constabulary, when lots of bigger Forces had more or less decided that it was too much for them ? Surely not. Still, there we were, so we could at least go through the motions.

During an evening which got more and more convivial our host, a very congenial Chief

Superintendent (now retired), tried to put us in the picture. "You must realise, Hamish," he said to me, "that policing up here is not at all like what you're used to way down South. For a start, there are more guns going through Inverness Airport than through Heathrow, Gatwick, Luton and Stansted combined. Forbye, we know perfectly well that if we arrested twelve people on the mainland and another six - or No, maybe seven - in Orkney, *crime would stop*. And then where would we be ? Look at all these statistics we have to submit to the Scottish Office in Edinburgh: Number of crimes committed - Zero; number of crimes detected - Zero; number of crimes undetected - Zero, and so on. They'd be telling us we don't need a police station in Dingwall, and we don't need a police station in Bettyhill, and *we're not having that!*"

The presentation and demo on the following day went exceptionally well, and it was clear that INDEPOL was going to be adopted as the basis of a new firearms control application. But how could it possibly be financed ? Enter another aspect of Northern ingenuity. For historical reasons, going back even before the invention of the police bicycle, there have always been lots of police houses in the north. It had to be like that because the local policeman might not leave his native clachan for months at a time. But with panda cars now able to criss-cross the country it makes sense to base staff in fewer and larger stations, so that a lot of former police houses are effectively redundant - but very attractive to incomers as potential holiday homes. So the Constabulary is in the lucky position of being able to look at a capital proposition and ask : "Is this a one-house computer or a two-house computer ?" and sell off accordingly.

First Visits - 3   **Rick Smith**

Peter Gershon - the 'pocket rocket' - arrived on his first day as the boss of New Southgate sharp at 7.00 a.m. The place was shut; not a sign of life. The security guard, prodded into reluctant life at this unbelievably early hour, was not welcoming : "Who the heck do you think you are ?" is a bowdlerised verson of his opening remarks. It was not a propitious start.

Then there was the realisation that, compared to his Company Granada, all his direct reports, when they finally deigned to appear, were driving Jaguars**.**

At midday, horrified to find that there was such an anachronism as a Directors' Dining Room, he led his bemused subordinates straight past it into the common canteen**,** where the combined effect was much like a Bateman cartoon.

The Dining Room became another Conference Room. The new era had begun.

What did I do ?   **Henk van der Vegt**

In 1986 I attended an international sales workshop in a Maidenhead hotel. For the dinner on the last day Mike Forrest was invited as the guest of honour. Before the dinner there was a happy hour, and I was sitting with one of Mike's assistants when Mike himself arrived. He was in a very good mood, and we had a short chat about the workshop until Mike spotted a number of Swedish participants at the bar. "Will you excuse me ?", Mike said, "I'm going to speak to those people at the bar because I don't see them as often as I see you", and so off he went.

Mike's assistant at my table suddenly started to look worried, and when I asked him what was going on he said : "I must have done something wrong but I don't know what". When I asked him what gave him that impression he said : "He was nice to me."

So now you know   **1986**   **Tony Law**

Oxford autologout dialogue :
'Is anyone there?'
'Yes, why?'
'We were going to log you out.'
'Thank God you didn't.'
'George 4 error - "God" does not exist.'

OPD - How I got involved in it   **Liz Tebbit**

The OPD was the first product to be sold at a discount to ICL staff. I actually took advantage of this offer and purchased a colour OPD. I also obtained a teledrive add-on peripheral which enabled me to store my data on real 3.5 inch diskettes - absolute luxury ! All this now sits in my loft cupboard, waiting for the day when it will become a desirable IT antique in the next millennium. However, as a result of using the machine daily both in the office and at home I became quite an expert.

In 1986 I was working in End User Computing, part of what was then 'Corporate Systems' or 'Group Information Systems', before outsourcing became the norm. EUC was housed in LON15 - Carlton Drive, Putney - and our purpose was to supply help and support to ICL staff in order for them to make effective use of the new-fangled desktop computing products. I remember producing a number of user's Noddy Guides to some of the OPD Xchange software, in particular the word-processing and spreadsheet packages Quill and Abacus (Microsoft, eat your heart out!)

OPD - I get highly involved in it   **Liz Tebbit**

One day I received a call from the very top of the company: Mrs Bonfield, no less, required an OPD to be installed at home. A service appointment was duly fixed for the afternoon of Friday 2nd May. The Bonfields at that time lived in an imposing villa by the River Thames in Shepperton. I remember pushing open the large wrought-iron gates, feeling just like Maria in *The Sound of Music* arriving at Baron von Trapp's house. I was crunching across the gravel forecourt toward the front door when suddenly from round the side of the house there bounded a red setter barking fit to bust. I later discovered his name was 'Gandalf', Peter Bonfield (no 'Sir' in those days) being a Tolkien fan. Having no luck with the bell I followed the dog round to the open kitchen door. A washing machine was whirring away on its spin cycle. No Mrs Bonfield. I poked my head around the door and called out rather unprofessionally : " Yoohoo ! Mrs Bonfield?" This did evoke a response; Mrs B appeared from within. She was wearing, I remember, a peasant-style black skirt and white blouse topped by a beautiful embroidered shawl. She greeted me warmly and took me into the hallway where the OPD boxes stood. "Oh!", I said, "It's black and white! I thought you would have had a colour model!" To which she replied : "Do you mean I could have had a colour one ? Oh, how mean Peter is". I decided it was wiser not to comment. Suffice to say I unpacked the OPD and then, fortified by tea and home-cooked honey biscuits, installed it in Mrs Bonfield's book-lined study. In the meanwhile a grey cat wandered in to check what was happening. It decided to sit on my lap while I put the software through its paces. Having given Mrs Bonfield a tour of the OPD's major functions, including the little gem of a package - Action Diary - I finished with my party piece, the voice-synthesised auto-answer message. Gandalf pricked up his ears at this unearthly sound, sat bolt upright, and then bolted out into the garden, not to be seen until half an hour later when I departed.

OPD - I get even more highly involved in it Liz Tebbit

A month after that episode, on Tuesday 10th June to be exact, the whole of London could have seen me entering the portals of Buckingham Palace. This time the lucky recipient of an OPD was the Hon. Rupert Fairfax, one of the several private secretaries to the Prince of Wales. The 'tradesman's entrance' to Buck House is next to the Queen's Gallery in Lower Grosvenor Place. It is staffed by government officials and, seemingly, off-duty policemen in their tea-breaks. I walked up to the desk and said : "I have an appointment with Rupert Fairfax". To which they responded : "Business or personal, madam ?" I was quite affronted and retorted : "Business". I was escorted by Jo Ashley, secretary to the Hon Rupert, to their office. This turned out to be a little room overlooking the parade ground. One half of it contained a kitchenette, the remainder was furnished in dowdy style with a sagging armchair, a wardrobe, and a rather fine antique desk on the top of which incongruously sat the colour OPD. Rupert's lunch-time appointment had over-run, which gave me time to acclimatise to the regal surroundings.

On his return he proved to be all that one would have expected with such a name - young, good-looking, and very public-school. I was curious to know whether he was related to General Sir Thomas Fairfax of Civil War fame. It transpired that said General was his great- (times n) uncle. "Ironic", said Rupert, "that my ancestor played his part in the beheading of Charles I, while here I am serving the future Charles III".

Rupert, I discovered, was on secondment to the Prince of Wales's office from the Hanson Trust. His main duty was to draft the speeches for HRH Prince Charles to deliver when he was promoting British business during his overseas tours. So Quill would be working overtime, it seemed. In addition to word-processing, I showed Rupert some of the smart telephone features afforded by the OPD, but decided to avoid the voice synthesiser.

Talking of protocol, I had been warned by the ICL marketeers handling this "sale" that on no account was I to out-stay my welcome on this prestigious service call. "How would I know ?" I had queried. "You'll be able to tell", they had replied. I had now been at the Palace for about an hour. It could be time to bow and take my leave. Rupert looked at his watch. "Would you like a cup of tea ?", he asked. The action moved to the kitchenette. The electric kettle was switched on, and out came the bone china tea service. While the tea was brewing, Jo opened the fridge and took out a bottle of milk. However, this was no ordinary bottle. On its side was printed the royal coat of arms and underneath the words "Buckingham Palace Dairy". There was just sufficient milk left in the bottle for our three cups. Jo looked warily at it, raised the neck of the bottle to her nose, and sniffed. "Yeah, that's OK", she pronounced and proceeded to pour.

After tea, I left the way I came. But as I was being led out through the warren of passages on the ground floor we turned a sharp corner and came face to face with a footman bearing a silver tray aloft. He was wearing the full regalia - frockcoat, breeches, and buckled shoes; I thought for one moment I had stepped into a pantomime. Seeing my look of amazement, Jo said : "That'll be Prince Andrew's tea". He, I noted, took it with lemon.

OPD .... But also H.C.

When ICL brought out the successful OPD, there was an agreement with British Telecom that they could also sell the same kit under their own brand-name. They chose to call it "Tonto". Which was all right until they tried to sell it in, I think, India, where that name was already used

for a brand of condoms. Which led some wag to point out that BT were trying to sell not the "One Per Desk", but a product of a very similar name; in fact so similar that it only differed in the two middle letters of the last word.

Leading edge language

(*Apologies: the following gem got detached from its covering letter, so I don't know to whom it should be attributed.*)

Andy Roberts' management of leading edge products at Station House in Bracknell was matched by his use of leading edge language, or so it seemed to many of us at the time. So what could be more appropriate than to wish him well at his leaving ceremony in 1986, using his very own words:

"As someone who Andy long ago described as his **deep throat**, I'd just like to say a few words in appreciation of his stay with us. In case anyone thinks I should have spent my time more fruitfully on Condor (PWS), **where I'm coming from**, I did not produce this alone. I had some help on the phraseology.

Andy started by getting the OPD **ducks in a row.** It was clearly **a smart idea** to create the OPD task force **upstream**. We were immediately **away at the races.** Moreover, we were **on the inside track**. We had to **retune our mindsets** and **all that good stuff**, but **it was all part of growing up. It sure beat the s*** out of me.**

Andy then established the Business Centre **across the piece**. The **upside** was that it **gave more bangs per buck**, with **folk** to **track** the operation **from soup to nuts.** If you think it had a **downside, you're smoking opium.** We were **pretty well backed up** with **sheets that do not lie** and **get out of jail free cards**. There were **no disconnects.** The **guys, girls, pops and poppetts took on board** the Business Centre - **heads, hands and feet**. **And etc !** All bets were **off. We were cooking with gas.**

Downstream we brought out the OPD. Its **bottom line** was that **it beats as it sweeps as it cleans.** Before the launch was **in place**, confidence in the OPD went **up and down like a whore's drawers**. But it was a **proper job**. In fact, I'll **bet a pound to a piece of s*****, we were **within a midget's digit** of getting a really **intergalactic tick in a box. It was all over in spades.** The launch was intergalactic - even the **Company dog** was **freed up for it.** And the food and drink disappeared **like a rat up a drainpipe.**

I've tried to indicate the secret of Andy's success. What would *he* say ? **In my book**, if you ask him **'What are you doing nights ?'**, he won't **sandbag** his response. He'll tell you **one on one** to go for **the fast track**, avoid any **roadblocks**, and **track any bluebirds up front.**

But I'm **spinning wheels. Good game**, Andy, and good luck"

Pissed but passed   **Graham Budd**

It is always said of the Swedes that they are either stone cold sober or stone cold stoned.

Anyway, they have the toughest drink-driving laws in Europe; one cc and you're out. That's by way of background.

We will not elaborate on the disaster at the Swedish Stock Exchange, nor count the number of days that the system was embarrassingly down, nor specify the number of experts of every size, shape and speciality flown in to sort things out, nor enumerate the hectic hours they worked, nor reveal how through the long hours they kept up their flagging spirits. That's the context.

Now in the spotlight see the ICL driver on the way home in his ICL car, well on the way to being paralytic, and stopped by an unfriendly policeman. "Have you been drinking, Sir ?" "Yes, I'm afraid I have." "And where have you been, Sir ?" "I've been working on the Stock Exchange computer". The policeman takes a step back, salutes, and says : "Then you'd better get a good night's sleep, Sir". Exeunt omnes.

Strange are the benefits of adultery   Pamela Budd

The installation in Tanzania was subject, for reasons which I now forget and which don't really matter, to a campaign of sabotage. Initially this was against the equipment - things like reversing the polarity on the power supply. But as this didn't seem to work it was turned against the ICL staff and, after attempts to run them over in the car park, they became very cautious. Their luck ran out, though, at a particular road junction when their car was forced to a halt, a submachine gun was poked in through the driver's window, and the man immediately opened fire. One shot hit the engineer who was driving, then providentially the gun jammed. The gang seemed non-plussed by this and, while they were working out what to do next, the salesman nervously edged the engineer out of the driver's seat, surreptitiously took his place, and drove off like blazes.

He couldn't take the man to the hospital, because that is obviously where the gang would look for them next. Fortunately, he knew that the wife of the ICL boss was having an affair with a doctor, and drove to the house where they were both likely to be guests at a party. Luckily, the doctor was there, and patched the man up. Another guest at the party was from British Airways, and got them both out on the next BA flight.

Catching up on him   Bob Peel

At one stage in his mid-fifties Mike Forrest was heard to remark "I must be getting old - I really do need my four hours sleep a night"!

Dutch Courage   Richard Dowdeswell

Les Cole had propounded the doctrine that we wouldn't try to attack IBM head on, but would go for a surround strategy, and this was promulgated throughout Sales and Marketing. Well that was OK in general but I, being young and know-all and (probably) insufferable, thought that it was too simplistic: there were some IBM weaknesses where we ought to go straight in for a direct kill. Being utterly confident of this, I pestered Les for a chance to put my point to him face to face, and was eventually granted an interview at, I think, 7.45 a.m. On the day I turned up well in advance and found myself kicking my heels over a cup of coffee in his secretary's outer office, not without some feelings of trepidation. For some reason, she fell to telling me about Les's gallant participation in the Arnhem landings. "Oh b***** it!", I had to reply, "No wonder he's not afraid of me!"

Jolly times at the Metropole   **Richard Dowdeswell**

Bruce Millar was in typically outrageous form at the bar in the Metropole, taunting me for some reason with lack of success with women, and talking dirty about a particular lady delegate to the conference whom I happened to know quite well. Seeing her not far away, I went over, and soon we were walking arm in arm back to the bar. When we got there she caught sight of Bruce and went utterly ballistic! Apparently a long time previously, when he was the worse for wear, he had assaulted her necklace and skirt, and she was a long long way from forgiving him. For the first time ever, I saw him embarrassed; in fact he went white. Anyway, I'm confident I won't have any more trouble from him about lack of success with women.

A problem with spelling   **Richard Dowdeswell**

A conversation in the bar at Beaumont, shortly after Aodh O'Dochertaigh had taken over from Geoff England as head of Training :

"Have you heard the one about Aodh O'Dochertaigh ?"

"I am Aodh O'Dochertaigh".

"Oh, then I'll tell it slowly".

Another Letter from Zanietta

Re : Leave Notice
Due to the sudden affair, I am sorry for I have taken a leave before my leave notice. Wish, I should not give you any problem for the above matter, and thank you very much for your kindly attention.

How do they do that ?   **Malcolm Stuart**

1/3 Factory at Letchworth looked as though a bomb had hit it. The decision had been taken to close down the factory and it was being systematically gutted.

In due course the computer room was emptied and all the services were disconnected - but not before Jeff and I had done our bit to help.

We had an idea that we could find a use for a certain length of armoured cable from underneath the false floor, and had watched several times how to disconnect from live circuits without causing oneself any danger.

Now it was our turn ! We sat opposite each other in a hole in the floor and gently unscrewed the live lead. Once the screw was loose the trick was to snatch the cable from its terminal. As we attempted this there was an enormous flash and bang, leaving both of us deafened and with a green glow in our eyes, still holding the offending red lead. It was some minutes before we could see well enough to finish removing the other two wires from their terminals. I guess there must have been a strand or two which flashed to earth. No harm was done, but for some reason the rest of the cables were left in place until the power was switched off.

Oh, that Dutch flippancy   **1989**   **Henk van der Vegt**

In 1989 I was heading Central European Office Systems Marketing from an office in Düsseldorf. It was quiet an interesting area, covering Benelux, The European Institutions, Germany, Austria and Switzerland.

We had received quite a lot of complaints from the ICL Germany HQ at Fürth near Nürnberg about the DRS 400 Unix Server; its 68020 processor was ageing and it needed replacement. So when the release of the DRS400E with the new 68030 processor was imminent we put a lot of care into the launch plans. Brochures were translated by a professional agency into German and Dutch and, just before printing, we sent the text to the countries for a final check.

From my team the main players were Tom Rijkebore, Product Introduction Manager, and Le Duc Tung, Unix Systems Product Manager. An appointment was made with our German counterpart at Fürth to discuss the introduction of the DRS400E in Germany. Coming from another meeting in Vienna I met Tom and Tung in a hotel in Nürnberg the night before, to discuss the details of our meeting the following morning. Tom and Tung had driven the 5 hours from Düsseldorf by road, and would take me back with them later the following day.

When we arrived at the ICL office in the morning we were welcomed a bit coolly by our German counterpart. His next action was to drop the brochure text proposal in front of Tom. About 75% of the text was crossed out, with other words scribbled over it, round it, and in all the margins. "You can't say this in Germany !" was the first statement. Next came : "Who did this ghastly translation ? It must have been done by foreigners!" When we told him that it was done by a very professional agency in Germany working for a number of IT suppliers, he just ignored our explanation and insisted : "It has to be changed!"

Tung started his presentation about the improvements of the DRS400E over the DRS400, the competitive pricing, and the many other advantages of the new server. At the end he asked the opinion of our host. This was a disappointing : "We can't possibly sell this system in Germany". I was utterly surprised, because in the past he had always asked for a DRS400 with a 68030 processor, and had said that this would take German sales sky high. But now this reaction !

His answer to my question consisted of three features which he found missing. I thought them very peculiar. Did he have a customer who needed them, I asked. "No", was the answer. "Then you must have an important prospect who insists on them", I suggested. But again he came back with "No". Obviously, my third question was : "Why on earth do you want these facilities if no customer or prospect needs them ?" I'll never forget his reply : "*Tomorrow somebody might call and ask for them*". "Well", I said, "That's tomorrow's problem; let's start selling today". In return I got an angry look and an angry exclamation, in a loud and angry voice : **"You Dutch are never serious!"**

The Corporate Seagull   **Tony Maynard-Smith**

A useful update to Peter Simpson's definition of help from the top : The Corporate Seagull = Those people sent by head office to help in a crisis: "They fly in, squawk a lot, shit all over you, then fly out again."

A new experience

Jan Woolston, red braces and all, encountered his first techno-podium, with built-in autocue. Ignoring the eye-level screen, he looked straight down into the bowels of the beast, and then exploded : "I can't read this ! It's all upside down !"

Anonymity Preserved

Before he joined ICL as a pre-retirement job, David McKenzie had had a long career in the Army, including a stint as Commandant of the REME school at Arborfield. It was during that time that a young National Service 2nd Lieutenant, approaching the end of his two years service, was Orderly Officer on the evening when some members of the IRA drove up in a hijacked Army Land Rover, turned out the guard, gave them a bollocking, and locked them in their own cells. They then stole a truck, loaded it with all the arms they could find, and drove off. The overloaded state of the vehicle was spotted by an alert constable, and in due course the bandits were flagged down, rounded up, and locked up. At Arborfield the balloon went up ! Where was the Orderly Officer? They searched high and low, but he was not to be found, not anywhere in the camp!

That didn't stop him, though, going on to have a varied and successful career in ICL.

Chapter 9 - ICL in the 1990s

Not exactly shipshape   **H.C.**

When Winnersh was opened as the Defence Technology Centre, its demonstration room was given a deliberately martial appearance. To emphasise ICL's involvement in OPCON, the Royal Navy's command and control system, one wall bore two giant plots of North Atlantic and European waters, purporting to show the disposition of various naval forces at two points in time, twenty-four hours apart. Which was fine, until one looked a bit closely at the two positions of one aircraft carrier task force. All known aircraft carriers, of whatever nationality, have their island superstructure on the starboard side of the flight deck. Either this carrier was a unique exception to that rule, or she was unusually adept at steaming backwards. Not only that, but her crew, in a masterly attempt at disguise, had obviously spent the time in shifting her funnel from the forward to the after end of the island. Exit verisimilitude.

Smoke signals - 1   **1990s**   **H.C.**

Like most ICL buildings, Winnersh had a no-smoking policy in force. A few forlorn characters were often to be seen enjoying a cigarette outside the back door, but inside the prohibition was absolute. Except in one corner of the ground floor. Iain Colquhoun's office was always shrouded in a blue haze. How could this be ? "The ban on smoking is a UK policy", he would explain, "And I work for International Division."

Smoke signals - 2   **1990s**   **H.C.**

We were a far-flung bunch in Secure Systems International, hailing from as far away as Loughton in Essex, Surbiton, Southampton, Hungerford and Chinnor in Oxfordshire. On the occasions when the low-flying Mullineaux joined us he came all the way from Huntingdon. (Donald lived in Lower Earley, only two miles away, so he was always the last to arrive). But Winnersh was unusual among ICL buildings in having an adequate carpark and excellent access from the A329(M) motorway. So despite repeated suggestions that it would make better sense if we were located in Putney with the rest of International Divison, Iain Colquhoun insisted that we should stay where we were. "It's like being back in my own submarine", was his explanation; "Those b*****s in Putney never know where I am or what I'm doing".

How beautifully expressed !   **1990**   **Vernon Hardman**

On the occasion of major events in the company's fortunes, (and sometimes not so major as well), an ICL Senior Management Briefing would be issued, the contents of which were to be cascaded in part or in their entirety down the management chain to staff. The Briefing would often exceed thirty pages and usually comprised the formal Press Release as distributed to the agencies and the media; a statement from the originator (the Chief Executive Officer or Managing Director) which expanded on the original Press Release; supplementary information - for example a summary of the accounts when releasing the annual financial results; and a (usually lengthy) list of questions which the originators thought members of staff, or outsiders, might ask, together with suggested replies. These questions sometimes betrayed a rather other-worldly impression of what staff were actually likely to be interested in.

As a typical example, the following excerpt from a Briefing of 30th July 1990 is offered without

comment :

Question 23 : How do I counter the charge that ICL has been "taken over" by Fujitsu and is now a Fujitsu-owned company ?

Answer 23 : This is not a takeover, but a manifestation of a mutually beneficial collaboration between ICL and Fujitsu.

Crocodile tears   H.C.

A tale of horror, misery, and rage ! Goodness, how sad !

There was a very large ICL installation running very successfully in a certain Arab country, but from some unknown source the Sheikh had been advised that they if they seriously wanted to prove themselves a thoroughly modern country they really ought to have an IBM computer installed. It was probably the same source that providentially happened to know of a giant IBM mainframe in the region, only slightly used, that just happened to be available for a really quite moderate number of camels, or their equivalent.

Space was therefore allocated at the far end of the machine hall for this gigantic beast, similar in size to a carriage on the Central Line. The contractors were a strange consortium based in Beirut and Teheran, and the first step in the installation procedure was to unroll the template which would show where the holes had to be cut in the floor for all the cables and, more important, all the plumbing. This was done with impressively professional aplomb, and the holes were duly cut. It was only later that it was realised that the template had been unrolled upside down.

The nucleus of the matter   H.C.

I only made a single visit to Pakistan, and as far as ICL's business was concerned it wouldn't have made any difference if I had never gone there at all. But my host, Colonel Javed Iqbal, was a courteous and delightful man, and made sure that I saw as much of the capital, Islamabad, as was possible during the little spare time in a couple of busy days. Then he drove me also to the adjacent - and older - city of Rawalpindi, I think largely so that he could show me some cantonment buildings dating back to the days of the British Army and probably to about the 1890s. To one who was brought up on Kipling, as so many of us were, the sight of these brought instantly back to mind the stories of the *Soldiers Three* - Mulvaney, Ortheris and Learoyd. By contrast, on the way back to Islamabad he said at one point : "You know, of course, that Pakistan is, *on principle*, a firmly non-nuclear country. So," pointing to an unobtrusive side road, "Our research establishment is up there." At the time it seemed no more than a mild joke.

A Company Song   H.C.

I'm not saying where I got this from, and I'm making no assumptions about whether or not it's genuine. What I do say is that I'm jolly glad I'm retired and can never be required to recite or sing such sickening twaddle, either solo or - heaven help us - in chorus in the office carpark !

AAH FUJITSU

Let's run out now
To greener fields
Where shines a splendid sun
We have a dream
A wondrous dream
That gets the best things done
A wide blue sky is in our heart now -
Openness in our soul -
We'll run together going onwards now,
On towards our goal
    Aah Fujitsu
       All tomorrow is our goal.

Let's join our hands
With everyone
And smile at each new hour.
We have a dream
An endless dream
Of youthful love and power
We want to use all our skill now -
All our strength's *(sic)* unfurled
We plan uniting all our new techniques
Over all the world -
    Aah Fujitsu
       Forges links all over the world.

Let's make a bond
From heart to heart
Throughout the human race.
An unseen power
Now in our grasp
Can even conquer space.
We want to find a new harmony
Both in work and play
We'll share the new things we discover now
Building a new day
    Aah Fujitsu
       Gives us joy with every new day.

Brain transplants   **David Bell**

The going rates are said to be :

-	for an ICL brain	:	£5,000 per oz;
-	for a DEC brain	:	about the same price as ICL, but the architecture's different;
-	for an IBM brain	:	£15,000 per oz (but then how many IBM people does it take to make one IBM brain ?)

Total Quality Management   **David Lewthwaite**

From a newspaper item : Quality is the name of the game at the rejuvenated ICL, once Britain's computer champion, but now owned by Japan's Fujitsu. Executives are required to demonstrate their commitment to excellence by sporting enamelled lapel badges, featuring a distinctive "tick" motif.

However, eyebrows were raised at a recent residential management conference when Peter Bonfield, ICL's executive chairman, turned up for breakfast without his quality pin. On being reprimanded, the resourceful Bonfield remained unflustered : "Ooops", he said slyly, "Must have left it on my pyjamas".

Over the top   **H.C.**

The Quality programme was undoubtedly a good thing, but it had its ludicrous aspects. One effect was a widespread outbreak of management-speak and platitude, the sort of turgid and politically correct blurb that spells out the obvious and tries to dress up common sense in the guise of fashionable dogma. One excellent example of this - which I can quote without giving offence to any ICL person - could be seen in the canteen at Winnersh. Sutcliffe Catering had an array of framed certificates, providing entertainment to people waiting in the queue to be served. By the time I left one could read their Mission Statement, their Philosophy, their Quality Policy Statement, their Nutrition Policy, and their Customer Nutrition Charter. Only, of course, nobody ever did.

A Celebration   **Anon**

I thought I knew who the author of this gem was, but when I tackled him with it he denied responsibility. Well, whoever the author was, I congratulate him.

<blockquote>

Come shout and sing and dance with glee
And celebrate with QIT
We're shining pure and error-free
On Zero Defects Day!

A great new age has just begun
An age of freedom, sport and fun
(You can't get through to HIT01)
On Zero Defects Day.

One little thing - the LAN is down
And both ITs are out of town
But cast aside that worried frown,
It's Zero Defects Day.

There's something wrong with ITD
And nothing right with CO3
X25? - You're kidding me!
It's Zero Defects Day.

The net result's no comms at all
The whole bang shoot is up the wall,

</blockquote>

So fill your glass and have a ball
On Zero Defects Day.

Just 'cos there's nothing getting through
That's no excuse for feeling blue,
It means we've got no work to do
On Zero Defects Day.

Nowt done at all means nowt done wrong
That's 'Zero Defects' all day long
So just relax and sing this song
On Zero Defects Day.

Compute the figures how you will
Our Price Of Non-Conformance bill
Adds up to absolutely nil
On Zero Defects Day.

So shout and sing and dance with glee
And celebrate with QIT
We're shining pure and error-free
On Zero Defects Day!

More ways of skinning a cat   **Mike Turney**

He was not perhaps the most effective of ICL's salesmen, but at least he did turn up at British Transport Police Headquarters with his sales manager with a proposal for an upgrade of our mainframe equipment. Frankly it was a deplorable document, and I was embarrassed at the prospect of having to go through it, and publicly shame this incompetent fellow, in front of our Deputy Chief Constable. But the Deputy didn't bother to read it (perhaps his antennae told him he'd be wasting his time); instead he told me to take the two ICL men up to my office, to discuss it fully and make the appropriate decision, and then come back to join him for lunch.

"Well", said the ICL sales manager when we had got settled into my tiny office on the top floor, "What do you think of it ?" There was no point in mincing words, so I said straight out that it was dreadful. I think I may have mentioned that in my opinion it was the worst specification I'd seen since Olaf the Viking fitted the horns on the inside of his helmet. However, we did discuss the whole problem, and reached a common understanding of what we really needed. "OK", said the sales manager finally, "We'll take it away and work on it".

Next day I had a phone call. The salesman had left ICL.

Minds not meeting   **Andrina Mockeridge**

The visitor from Pakistan whom we escorted to the Department of Social Security was really quite senior, and he showed every sign of taking a keen interest in the details of the systems that were running on a tidy number of ICL mainframes to support the payment of benefits. But perhaps we and the DSS hadn't quite explained what was going on quite clearly enough. When the time came for questions what he wanted to know first was what system the UK used for

collecting the money; at home they used men on bicycles, but they didn't collect much money because they kept getting hit on the head.

Now *that's* experience   H.C.

ASMA, the Air Staff Management Aid, was the RAF's simple but highly effective command and control system. It may still be, for all I know. It did a superb job in the Falklands War. On the basis of that it was entirely appropriate for Secure Systems International to demonstrate the system widely to friendly foreign countries and try to get supplementary sales. A demo copy of the software was duly installed at one stage in Cairo. But it was never entirely clear who saw it while it was there, and deleting it seemed to take a long time and perhaps, in retrospect, wasn't done as cleanly as it should have been. Then along came the Gulf War, and once again ASMA performed magnificently. Those who had the chance to compare said that it knocked spots off the much more sophisticated American command and control systems. So the marketing slogan could be upgraded to read : "ASMA - the only command and control system on the winning side in two wars". But if the rumour was true, and there really had been a pirate copy of the software in Baghdad, we could go even better and call it : "ASMA - the only command and control system on the winning side in two wars and the losing side in one".

Another Olympic event   c 1992   H.C.

The purpose of the journey was to persuade the New Zealand Police that they ought to use ICL kit, and preferably INDEPOL software, for their proposed Criminal Intelligence application. Let me simply say that in this we failed utterly and miserably. The NZP had become fatally infested by the sort of PC bigot who believes that there was no computing worth the name before DOS, and that there is no application worth building which involves sharing information between users. Eejits ! Anyway that explains why we were on our way back to UK, Peter Donnelly and Dave Terry of the Lancashire Constabulary and I myself, with our tails between our legs. And we had flown from Wellington to Melbourne to connect with the BA flight back to Heathrow.

Normally there are few more boring and dismal occupations than waiting some hours in a distant terminal for a connecting flight, but on this occasion we found ourselves on the sidelines of a hilarious example of pandemonium and organisational cock-up. It kept us magnificently amused. After Athens and Thessalonica, Melbourne is the third largest Greek-speaking city in the world, and a large crowd of Peloponnesian peasants, returning after a visit to their relatives, was trying to board an Airbus of Olympic Airways. None of them spoke a word of English and, curiously, none of the airline staff seemed to speak a word of Greek, so there was total mutual incomprehension. But what really caused the riot was the fact that there had obviously been some sort of ghastly disaster in the issue of boarding cards - probably more cards than seats, or something like that.

The airline had apparently decided to board the passengers in sequence, but not in some simple and familiar sequence like row number. Over and over the message came over the Tannoy, with the Australian announcer's voice getting more and more frustrated with each repetition : "We are going to board you in the order of the serial numbers on your boarding cards. That's *not* the seat and row number. *It's the serial number printed on the* **bottom right corner** *of your boarding cards*". As communication it was utter failure. This herd of small incomprehending rustics, uniformly black-clad, and making what Lawrence Durrell called 'Promethean Greek gestures', continued to mill about in front of the gate in mounting impatience. It was the best impromptu

street theatre we could ever have hoped to watch, and it passed the time wonderfully.

With great superiority we heard the quiet voice inviting us to join flight BA010 for Sydney, Bangkok and London Heathrow, and left them to it. Some of them may still be there.

Eastern hazards   **Andrina Mockeridge**

In the course of her duties as a member of the International Visits Unit, Margaret was accompanying a delegation of visiting Malaysians, led by an important General. They arrived at a small hotel outside Newcastle, and settled in.

Some time that evening, the phone rang in her room. It was one of the General's bag-carriers. "Come for a drink in the pub", he commanded. So she went. They had an innocent drink and returned.

Later that evening, the phone rang in her room. It was another of the General's bag-carriers. "Will you take me for a drink in the pub ?", he enquired. So she went. They had an innocent drink and returned.

Still later that evening, the phone rang in her room. It was yet another of the General's bag-carriers. "Let me take you for a drink in the pub", he requested. So she went. They had an innocent drink and returned, but not without her seeing that the landlord was harbouring dark suspicions about the exact nature of her duties as a member of the International Visits Unit.

They order, said I, these matters differently   **H.C.**

It was a very successful policy: selling INDEPOL police systems only in countries which we enjoyed visiting. Thus the Royal Hong Kong Police, the Polis diRaja Malaysia (that's the Royal Malaysian Police to you), the Queensland Police Department, and the Botswana Police could be assured that they would receive our friendly support and attention.

There were differences, of course. Thus in Botswana it is an offence to drive an animal-drawn vehicle on a public road with three or more animals yoked abreast. And if an offence has been tried in a traditional tribal court rather than a local magistrates' court or the central crown court, the penalty may be expressed as a) an amount of money, in sterling, in South African rands, or in the local Botswana currency called 'pula'; or b) a forfeit of livestock, in numbers of poultry, or goats, or cattle; or c) a number of strokes from a variety of instruments, sjambok among them. None of these points were a natural part of the Lancashire Crime Recording System which we adapted for them.

The anti-Triad demo used some real information - years out of date, and in any case everybody mentioned was behind bars for a very long time - but we could only use it for demos if we falsified the names and addresses. The central character in an unsavoury scenario was Wong Ping Fai. But was that his real name or the falsified version? Can't remember, so I hope he's still inside.

But this is an Australian story. On one visit to Brisbane our friends in QPD told us of the fate of their new Commissioner. (He was from Victoria, so naturally an object of suspicion, contempt and derision to the robust native Queenslanders.) Reviewing a piece of video from one of his own

Department's surveillance cameras, he happened to catch sight of himself jaywalking. So he had himself up before himself, charged himself, tried himself, found himself guilty, fined himself, and then paid his own fine to charity. He must have been acutely aware of the predicament of his predecessor, who was just starting a seventeen year term for corruption.

An Indian Club   Peter Hall

A day or two before I set off for my first visit to India, a young salesman rang me and asked if I would kindly get in touch with his father while I was there. Obviously I already knew Prad Kansara, who was doing very well as account manager for the Post Office. He wanted me to report to his father on how he was doing in ICL. This I was happy to do, but I thought it best to get Prad to suggest to his father that he get in touch with me rather than the other way round; I had no idea of what his father would be like or even if he would want to see me.

In fact I had a call from him within a day or two after arriving in Bombay, asking me to join him for dinner. He told me to get a taxi and go to the Willingdon Club. This I did with some apprehension. The taxi wandered its way through some pretty unappetising and slummy parts of Bombay before eventually turning through some guarded gates into the most magnificent grounds. It was a dark night, but the grounds were lit with great subtlety. And as we drove up to the impressive front portico of the entrance, I heard over a public address system a most cultured voice announce '40 - love' from the floodlit tennis court.

The Willingdon Club was the most luxurious and prestigious club I had ever encountered, and Prad's father turned out to be the recently retired Chairman of the Bank of India. He gave me a wonderful dinner and I met some very interesting people. In return I was delighted to be able to give him a glowing report on his son.

A Malaysian Club   H.C.

It had already been an enjoyable and interesting day in the office of ICL Malaysia, up on the 7th floor of the building called Wisma Damansara, and to round it off in style little Kamar, the Managing Director, announced that he was going to take us all - visitors and local staff together - out to dinner at the Lakeside Club. This, along with the Selangor Club on the Maidan, was the number one location in the whole of Kuala Lumpur. One of the locals asked how to get to it. Without a moment's pause I said : 'From the centre of town, drive uphill on Jalan Parlimen as if you were going to the office. The first turning on the left is Jalan Cenderewasih. Turn left there and then immediately right through the gates to the Club.' Kamar's face was a picture. He wasn't to know that I had dined there the previous evening, as a guest of a family friend, a splendid Sikh who was the retired chief engineer of the Royal Malaysian Railways. (Trained, incidentally, at Horwich - see 'The Third Installation', Chapter One)

Three of Clubs   H.C.

I was privileged on a number of occasions to be taken by Bill Liu to the magnificent Tanglin Club in Singapore. As in other countries, the splendid facilities built for the elite of colonial times are much enjoyed and carefully preserved by their present day successors, and the waiting list for admission to membership is longer than ever before. One of these visits took place at a weekend, and was aimed to introduce me to the Club's famous 'Curry Tiffin'. In help-yourself buffet style, what seemed like vast tubs of every conceivable kind of curry were laid out,

surrounded by an immense array of side-dishes, with chutneys, sauces, garnishes, and toppings almost beyond number, in every gradation of flavour and spiciness from mild and innocuous to call-for-the-fire-brigade incandescence. This all took place in a giant room, wood-panelled in dark splendour. I was told it was called the Churchill Room. When I asked why, my attention was drawn to the only decoration: halfway along one vast wall, in a modest and plain little frame there was a photograph of the great man, slightly larger than a standard picture postcard.

My very own diplomatic incident, 1993   **H.C.**

Things had been going so well with the Botswana Police that the salesman thought their success should be demonstrated to other police forces from the other independent southern African states such as Swaziland, Lesotho and Namibia. So he arranged for a party from the Lesotho Police to visit Gaborone, the capital of Botswana. Unfortunately he didn't realise the need to go through diplomatic channels, and the Government of Botswana got very shirty when they heard of the proposed visit, because it should have been formally requested on a government-to-government basis. They couldn't stop the Lesotho people coming to see ICL, but they wouldn't be allowed to meet the Botswana Police.

Incidentally, Lesotho had at that time had an embarrassment of a different type. They had taken delivery, probably as a gift, of some Russian helicopters, which entered the country by road. When they were assembled it was discovered that with a minimal fuel load, and with the engine at max chat, they could just about get off the ground, but no more. No-one in Moscow or Maseru had counted on the airbase, at about 6000 feet, being above the machines' operational ceiling.

I was working late in the Government Computer Centre in Gabs when the phone went. Nobody else seemed to be about, so I eventually answered it. The caller proved to be from Air Traffic Control at Sir Seretse Khama Airport. He said that he'd had a request to file a flight plan from a pilot whose plane was supposed to bring some people from Lesotho to Gaborone the following day. Could I confirm that they were coming to visit the Government Computer Centre. 'No', I said, 'They're not allowed to come to the Centre, but they are coming to visit ICL at ICL's offices.' It transpired that only the first part of my reply had registered.

The following morning there was a very indignant phone call from ICL in Johannesburg. "Why has the Lesotho party been refused entry into Botswana? Here are these senior Lesotho policemen, feeling very insulted, wasting their precious time in Johannesburg, and blaming ICL for it. What are you going to do about it?"

The upshot was the fastest ever road journey between Gaborone and Jo'burg, and we gave them a full presentation on INDEPOL and the Crime Recording System on the following day. But I don't think they were impressed.

Dry Joints again   **Peter Porter**

In 1994 at the Repair Centre we came on a problem with a much more powerful piece of kit, a "Dragon" motherboard from a SUN System. This carries two SPARC processors, full duplication of all its Memory, Bus and In/Out controllers, and slots for up to 512 Mb of RAM. The fault report said 'intermittent errors'. Pressing on the board while the diagnostic tests were run caused error messages. These pointed to one particular component, an integrated circuit about one inch square with 200 pins soldered to individual pads on the surface of the PCB. With

power off, using a magnifying glass and a dentist's fine pointed probe, each pin in turn was pushed to see if it was secure. As usual it was almost the last pin tested which did move, revealing a dry joint.

I wonder if one day the possibility of dry joints will be completely eliminated ?

Pothole Justice, 1994   **Martin Wright**

In Botswana the road surface sometimes leaves a lot to be desired, but one gets to know it. On the way to the Police College, where we were training policemen in the mysteries of IT and Crime Recording, there was one particularly large car-devouring pothole. It was so large that a deviation round it had been created to one side of the road. One morning, ex-Bournemouth policeman Stan Cresswell, our lecturer for the day, was proceeding from the hotel on one side of Gaborone to the Police College on the other. For most of the way he had been hassled by some local hot-shot in a souped-up red Mercedes with wings, spoilers, skirts, lowered suspension - the lot ! Being a good ex-police driver, Stan did not succumb to road rage, but planed smoothly ahead. As he went down the road to the Police College he allowed the Merc to close right up behind him. Just as he reached the pothole, he took the required avoiding action and drove serenely on. Looking in his mirror he saw a large dust-cloud, with chunks of red bodywork flying in all directions. The pothole had claimed another victim !

Forrest fire   **Rosemary Absalom**

After retiring, Mike took his wife Anne for a world tour. At one stage of this, they planned to stay at an extremely exclusive hotel, far away from the touristy areas, on the secluded north coast of one of the Balearic Islands. They arrived during the aftrnoon, and checked in. While they were at the front desk, it seemed like a good idea to book a table for dinner in the restaurant, whose renown was world-wide.

"We very much regret, Señor; the Restaurant is not available this evening."

First symptoms of mounting choler: "What do you mean - it's not available ?"

"The Restaurant is reserved, Señor, for a private party."

By now the magma was definitely rising: "W h o s e   p r i v a t e   p a r t y ????"

"Señor, Their Majesties the King of Spain and the Emperor of Japan."

So they ate in the second-best restaurant after all.

Spelling Chequeing - 1   **Rick Storr**

ICL, as part of the STAP agreement, were preferred suppliers to the UK Employment Service along with Siemens Nixdorf and IBM. There was a long run where Siemens were winning most of the contracts. One spell-checked response from ICL Sorbus went into the customer saying that it came from ICL Sourpuss.

Spelling Chequeing - 2   **Rick Storr**

A response went into North Shore City Council in New Zealand after having been through the spell-checker. It contained details of ICL's offer to set up a Data Whorehouse for them.

Protocol Mysteries   **John Booth**

From an Earwig e-mail conference report, 1994 :

"TCP/IP can sought all that out for you automatically".

The numbers go on for ever   **Tony Maynard-Smith**

It is surprising what manages to survive the turbulent times we live in. In about 1970 when Special Systems Division was formed in Stevenage a series of numbers was started to identify specifications and other documents. Since then the department has been moved to Letchworth, grown, been renamed several times (the longest period being as Letchworth Development Centre), amalgamated, carved up, moved back to (a different building in) Stevenage, carved up again, moved to the original building in Stevenage, and finally dispersed to the four winds. All the equipment we worked on is long gone, and most of the people too, but that sequence of numbers is still going and in active use today, with about one new number being allocated per working day over a life of 25 years.

Wind bags ?   **John Booth**

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ICL        OCCUPATIONAL HEALTH AND SAFETY
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              N E W S L E T T E R      MAR/APR 1995




   Drivers of any Vauxhalls fitted with air bags are
   also being recalled for checking of the air bag
   after a fatal accident in Germany.

   If you have not received a recall from ICL Fleet
   Admin or the Vauxhall garage from which you
   obtained your vehicle, contact your local Vauxhall
   dealer to arrange for the appropriate work to be
   carried out.
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Fortunately, I was never recalled, and have suffered no problems with my air bag

Regards

John Booth

Technicalities   **1996**   **Vernon Hardman**

The Commercial Manager met with the Client Manager, the sub-contractor's Project Manager,

and the Project Director, in order to review the base costings from which an overall bid price had been derived. The operational costs were discussed at length, and the Project Manager responded in a clear and satisfactory manner to a large number of detailed questions. Attention then turned to the capital costs associated with the initial set-up. Again, the Project Manager responded in a clear and helpful manner, with all the necessary supporting detail, which he had at his fingertips. He explained that the capital costs included such things as additional IT equipment and test equipment for the communication lines. Unfortunately, in the latter case he referred to the equipment as "Sniffers", which gave rise to the following :

Commercial Manager : "I'm sorry, I don't understand what you mean by sniffers. Can you explain ?"

Project Manager (with no change in demeanour, body language, facial expression, or intonation): "Yes, of course. You know that we are installing in a number of very old buildings; indeed, some of them are listed, so that we're very limited in what we can do to them structurally, either inside or outside."

CM : "Yes."

PM : "Right. Well, because the buildings are so old, the good news is that there is a lot of space between the floors and the ceilings below. The bad news is that in some cases there could be problems with mice."

CM (with a slight look of disbelief) : "You're joking !"

PM : "No. I'm deadly serious. Potentially it's a very serious problem. For example, it caused horrendous difficulties in the old West Gorton building years ago, and there's been the odd case reported in the computer press from time to time. You see, it seems that the beasties tend to like the plastic covering of the cables, no matter what we coat them with, and they are liable to gnaw through them. Of course the main disadvantage is the loss of signal; but unfortunately there's the additional hazard of fire if a power cable shorts out. And if you do get a problem, trying to track down and pinpoint the location of the fault in an underfloor space can be a nightmare."

CM (now entranced with the explanation) : "So how does a sniffer help ?"

PM : "Well, you know how dogs are trained for all sorts of tasks these days, not just guide dogs for the blind, but also to help the deaf and the disabled, to search for drugs, and so on. Well, this is another instance. After we've pulled or laid the cables, we send a specially trained small dog into the underfloor space to kill or drive out any rodents. As you know, these dogs take a long time to train and that is why they are so expensive .... "

Unfortunately, at this point the Project Director could no longer keep a straight face and the spell was broken by an outbreak of hysterical laughter from him and the Client Manager. The Commercial Manager's response is not suitable for inclusion in such a family book as this.

Longevity   David Bell

Quote from a presentation in mid-1996 : 'The last corrections to GEORGE III were issued in 1990, and there are several systems still happily running. I'm happy to be able to tell you that

all the horror stories we hear about the change of date in 2000 won't bother GEORGE, but there may be some problems in 2047.'

Wakefield Service Desk - Silly Calls 1   **Pam Clark**

"I recently purchased an old ICL monitor from a car boot sale, and would like instructions for turning this into a television".

Wakefield Service Desk - Silly Calls 2   **Pam Clark**

A customer logged a call asking for an instruction booklet for an ME29 system, but could give no further details of the kit. When the desk sent out an engineer to take a look at the system it turned out to be just a keyboard and monitor purchased from another car boot sale.

Wakefield Service Desk - Silly Calls 3   **Pam Clark**

I was monitoring UK-wide FOUNTAIN PC calls, and found one for an installation where the customer was getting a bit shirty and chasing us for an ETA. When the service desk phoned up to arrange a convenient time for the engineer to call and install the PC the customer said they were expecting a WATER FOUNTAIN - nothing to do with computer kit at all.

Personal Mugs   **John Booth**

A remarkable announcement in Stevenage Vending News: (The date was apparently a coincidence.)

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PERSONAL MUGS

From the 1st April, 1998 the use of personal cups and mugs
will not be approved in the Cavendish Road complex.

Vending machines will have the hot water facility disabled,
and restaurant staff will not accept drinks for payment
presented in personal mugs.

This is a local ICL policy decision aimed at reducing
spillage and ICL's Health and Safety liability of mugs
being washed in toilets.

Further measures aimed at reducing spillage from vended
plastic cups are being considered and will be implemented
as soon as possible.

Site Services are mandated to implement it and we regret we
cannot enter into any correspondence on the subject.

Your co-operation will be appreciated.
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And the inevitable reply (also dated 1st April) :

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I was quite surprised to learn from your Vending News announcement that
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the restaurant staff had been accepting drinks presented in personal mugs as payment. Will they continue to accept drinks in other receptacles as payment ? Would you consider extending this bartering to other goods ?

Before reading this announcement, I had not thought of washing mugs in the toilet but it does seem an ingenious alternative to a dishwasher. However, this may explain why we have a large number of diarrhoea-coloured mugs. As these are now superfluous, would you consider accepting them as payment in the canteen (without any drink) ?

Chapter 10 - Finalities

Who, why, when and where ? I think we can guess what.   **H.C.**

*When I was collecting for the first **ICL Anthology**, a broadcast email request for material brought in some excellent stories. It also produced the following, in OfficePower format, which hints at another exciting story, but gives no clue to the identities of either sender or addressee, so I pass it on in full - in confidence, of course. Someone in ICL obviously hadn't quite mastered the business of getting email address and document correctly attached.*

Ah, now, about Phil's exploits with the nurse. He'd kill me if he found out I told you. However, in confidence, let's just say that certain physical changes failed to happen at certain vital moments.

Googolplex (+1)   **Conway Berners-Lee**

George Felton's young son said to him, as his father was tucking him into bed one night : "Daddy, is there a number bigger than all the other numbers put together ?" This took some thinking about, but eventually was answered : "Well, even if I told you the biggest number of all, you could still add one to it." "No, but, Daddy, is there a number bigger than all the other numbers ? If you tell me, I *promise* I won't add one to it."

The French Counting Pig   **Alan Beer**

There's this French TV programme - a bit like *That's Life* - and one of the things they have on is performing pets. So one evening the compere announces : "Messieurs, mesdames ! Tonight, we 'ave for you zee talking peeg!"

On comes a man with a pig on a leash. He turns to the pig and says :"OK, pig, what ees five plus four ?" And the pig says "Neuf". Wild applause from the audience.

"OK, pig, what ees twelve minus three ?" And the pig says "Neuf". Slightly less applause.

"OK, pig, what ees three times three ?" And the pig says "Neuf". At this point the show's host is a little disappointed, and he says to the man : "Zees peeg only knows zee answer when eet ees neuf !"

So the man says : "Non, watch zis." He walks round behind the pig and says : "OK, pig, what ees four plus four ?" And he gives the pig an enormous kick in the Cobols and the pig goes : "Huuiitt !"

The earliest quote in this book

From 'Household Words', Charles Dickens' weekly magazine, July 1850. We've all met software to which this could still be applied.

Among rubbish-tip pickers two other departments, called the 'soft-ware' and the 'hard-ware' are very important. The former includes all vegetable and animal matters - everything that will decompose. These are selected and bagged at once, and carried off as soon as possible, to be sold

as manure for ploughed land, wheat, barley &c. Under this head, also, the dead cats are composed.

Precursor, 1858 H.C.

From a biography of Lord Kelvin

Laying the Atlantic cables, in which the predecessors of STC were deeply involved, tested the technology of the time to the limit. Here is an example of the ingenuity which this task brought forth : "Watching the spot of light was a great strain; also there was a liability to make mistakes. So Lord Kelvin's busy brain devised the Syphon Pen, by which the cable wrote its own messages. The pen was made of hair-like glass tubing. It did not touch the strip of paper which was mechanically carried past, but a little instrument, called the mouse-mill, electrified the ink and forced it in a fine spray through the pen." Not all that different from the inkjet printer attached to the PC on which this book has been compiled, one hundred and fifty years later.

The Rest is Silence 1994 H.C.

I actually retired from ICL, after thirty-six years, in October 1994. But a month later I was asked if I would like to take part in one further effort to sell a Crime Recording System to another of the southern African police forces. So I made one final trip to Botswana, a happy - and I hope successful - occasion, enlivened by this hilarious evening. There could not have been a better way of confirming that work for ICL was always fun.

Gaborone, the capital of Botswana, is a small town attractively laid out by a Swedish town-planner. A mile to the west is the rather incongruous Sheraton Hotel, fully western in style and fittings, although it looks out on undisturbed bush. Its Fish Eagle Restaurant is excellent. (The African Fish Eagle is Botswana's national bird, and a very fine one too.) There is a rich and varied buffet; the steaks on the à la carte menu are always superb; the house wine deserves a lot of respect (and is cheaper by the glass than by the bottle); the staff are friendly. All right, the service can be extraordinarily slow. But, on the whole, full marks.

Except in one respect:

The end furthest from the door is infested by a little excrescence who thinks of himself (nobody else does) as a musician. This person is short, weedy, approximately male, apologetic in attitude and manner, wears a short scruffy beard (because his Mummy would never trust him close to a razor), and has the beginnings of a bald patch (caused by scratching his head to see if there is anything inside there). He makes an *awful* noise.

His equipment consists of two electronic keyboards, a control panel, and a microphone. The keyboards are of an inferior sort which can produce any variety of sound in the short range between twing and twang. The control panel permits minuscule adjustments to be made (for no reason that any musicologist could decipher) to the timbre of either - or both! - keyboards. The microphone is derived from that long line of electronic development which ensures the incomprehensibility of all railway public address systems.

Thus equipped, he renders the air hideous by laboured renditions of what colleagues say are some of the better-forgotten pop hits of the past three decades. At least, that is what they deduce must

be his intention, after all more charitable explanations have been discounted. It is, however, difficult to be certain of the identification of any of his efforts, since they are emitted with a pronounced discontinuity. A bar is played; there is a pause; something is tweaked on the control panel; another bar is played; there is another pause; another tweak is made; and so on, seemingly ad infi-bloody-nitum.

The volume control is set to a level just below excruciating pain. The noise prohibits conversation. It monopolises the attention. It sours the wine. It imparts an acid flavour to the food. The waitresses, as they emerge from the kitchen, cringe from the impact of it. Businessmen, tired from a day of negotiating contracts, shudder into their soup. Air hostesses reflect on the preferability of room service. Crying children seek solace in the laps of their equally distraught mothers. Echoes of the *Purgatorio* spring unbidden to the reflective mind.

The apocolocyntosis of this occurs during the restaurant's weekly 'African night', inevitably marked by an interminably repetitive and multi-versed version of '*Mangwena Pulele*', which goes on and on and on and on and on. One remembers - with comparative affection - Tom Lehrer's introduction: "Here now is a folk song for all those folk who think that singing fifty verses of "*On top of Old Smoky*" is just twice as enjoyable as singing twenty-five."

There has hitherto been but one relief. Halfway through the evening the little tick has to go off and feed himself. This he normally does in the company of the other abysmal noise-maker whose only apparent function is to lugubriously accompany his tape recorder in the Kalahari Bar.

Now if our friends from Cambridge - the fingerprint experts who were accompanying us on this trip - could only be persuaded of the superior benefits and qualities (and calorific balance) of the serve-yourself buffet it would be possible to wait till this blessed silence has fallen, dash in, find and consume a starter, order and enjoy two rounds of house red, spring to the counter again for a piled and varied main course, follow this by a delicate after-choice of copious fruit or over-indulgent pudding, decline the offer of coffee, sign the separate bills dictated by local custom, and make a dignified and lordly exit before pipsqueak switches on the cacophony again.

But, alas, something - one can only suppose that something odd happens to people who dwell in fen country - predisposes said colleagues to order à la carte steaks. Nothing wrong with that, you will say. Indeed. Quite right. There is nothing in principle wrong with it. And the steaks, when they come, argue strongly in favour of the wisdom of the choice. Ah, but when do they come? There, as someone said, is the rub. One has no privileged insight into the procedures within the Fish Eagle kitchen, but one deduces they are slow almost to moribundity. Can it by any rational process take, (as it once memorably did), forty minutes to extract two steaks from the fridge, grill them lightly, associate them with some chips, place the result on warm plates, and bring them twenty yards to a table? Though I suppose one must make some allowance for the time for the food to get cold - as it always is - before being served.

Anyway, all of that was no more than preamble. The real story starts here:

We were a distinguished party in the restaurant on the evening of Thursday 17th November: From ICL Secure Systems International there were the Sales Manager and two Principal Consultants. From Cambridge Neurodynamics Ltd there were the Managing Director and Technical Director. The Royal Swaziland Police were represented by Deputy Commissioner Isaac Magagula and three other senior officers. ICL South Africa was present in the forms of

Bob Pillay and Hans Bargholz. And, fittingly, at the head of the table there sat the imposing figure of the Managing Director of ICL Botswana, Mr O. Kitso Mokaila.

Since we needed a large table, we were located no more than twenty feet from the source of the din, and the meal started to the accompaniment of the usual abominable racket. Conversation was impossible. Intelligent remarks bellowed into the atmosphere failed to reach the intended ears. Silly smiles and incompetent gestures took the place of rational communication. Frustration grew and the sense that opportunities were being missed became overpowering. Something had to be done.

And then the cacophonous thingy - smarmy, self-deprecating (after all, who better to deprecate him?), wimpish, oleaginous as ever - slunk away to eat. Cometh the moment, cometh the man. The great Mokaila, muscles honed by hours of the most intense squash matches, nerves ataut like sprung steel at the behest of his fertile and alert intellect, sprang with tigerish energy and effect into instant, focussed, and most purposeful action. One bound, and he was at the side of a neighbouring table, close against the wall. "Pay no attention!", he hissed authoritatively to the three sober-suited businessmen there seated who, in the welcome silence, were beginning to enjoy their meal. "And don't say anything!" he dictatorially concluded, as with polished dexterity he whipped the plug from its socket, with agile thumbnail winkled the fuse from its embrasure, replaced the now neutralised plug in the wall and, with an instant resumption of directorial dignity, returned to his seat. It took no time at all. Nobody noticed. And nobody - *except us* - knew.
The discussions which we had always planned to hold over dinner now proceeded as intended. Requirements were expounded and reviewed. Funding opportunities were sought, identified, and explored. Political and operational priorities were subjected to prolonged and intensive scrutiny. Joined in pursuit of mutual objectives, the greatest intellects of the sub-continent, in the interlocking fields of law and order *and* information technology, charted the possibilities, explored the alternatives, and were coalescing in agreement on all the vital points of the next who, what, how, and by when. It was a very productive session.

The little bedlamite came back, rosy with presumption, burping with repletion, intent on refilling the night with his peculiar brand of nauseous antimusic. He switched on, and began rootling in his storage bags for the sheet-music planned for the next ghastly session. That found, he turned back to the keyboards. But, what's this? No comforting green power-on lights? No accustomed hum of cooling fans? Nor, when the microphone is tapped, any reassuring blurp of formless sound? No power? Surely one of the suits in this restaurant must be a talent-scout for the greatest TV station south of the African equator - and now no chance for fame and fortune?

He dithered around the kit for a bit. All the switches were on, all the leads were connected, all the ... Ah, what about the power lead? He traced this to the socket in the skirting board, eyeing the three sober businessmen with the beginnings of suspicion. But, no. The plug was still firmly in the socket; the socket was switched on. Ah ha! there must have been a local failure in the power to that socket.

Away he went, beaming, to reappear with an extension lead. Plug removed from wall; entered into socket of extension lead; plug of extension lead inserted into another wall-socket. No joy. Try a third wall-socket. No joy.

Away he went, puzzled, to reappear with Maurice Sole, the hotel's other music-murderer. They

re-traced all the connections, re-switched all the switches. They smelled the keyboards for evidence of fire. They followed the power lead, and the extension lead to the sockets on the wall. They glared at the three impassive businessmen with the beginnings of black curdling hatred.

Away they went, distraught, to reappear with the hotel electrician, who went identically through all the same motions and checks, to conclude with - not surprisingly - identical results. And by this time the three blameless businessmen would have stood no chance against any local jury. Ah, but the official electrician was a cut above the others. He didn't go away to seek help; he used his *portable phone* to summon it! And, in due course, it came.

What of the rest of the players? Well, we actually achieved quite a lot of agreement on what should be done next by all of us to support the Royal Swaziland Police in the development and implementation of the information technology strategy - a great deal more agreement than we would have achieved if the noise had continued at its previous level. *BUT*, it must be confessed that it is a strain - not usually encountered during IT strategy discussions - for twelve people to hold their faces in serious composure when each face-owner is potentially bursting with suppressed gigglement. All credit to us all - we did it!

Meanwhile, other forces were converging. Mike, the restaurant manager, ebon-black, and with the physique of Mike Tyson's kid brother, and initially always grim of visage, (though his open ready smile betrays the fact that at heart he's a real softie who only wants to be friends), hove in view. With a professional's instinct for where the source of the trouble might be found, he took up an observation position five feet to the east-north-east of Kitso, and awaited events. The face of the Managing Director of ICL Botswana, though he was well aware of the intensity of the close-at-hand scrutiny, bore throughout a look of placid unconcern and unassailable innocence - which was in itself conclusive proof of his possession of that level of acting ability indispensible for those who would climb the management ladder in ICL.   But, oh!, it made it even more difficult for the other eleven of the party to preserve their own calm façades: Kitso playing *innocent*! and doing it *so well*! How did we not burst?

Jennifer, the hotel's Swiss manageress, hovered in the background. Just as well, really; if she had got more closely involved, things might have turned too serious and therefore too nasty. But good generalship includes knowing when to stand back, keep quiet, and merely observe.

Then, at last, at last, the penny dropped. "How could it all have been working so well for so long with that plug - which doesn't even have a fuse in it?" From the depths of the electrician's kitbag a suitable fuse was unearthed. It was fitted. Power was restored. And the noise, very much belatedly, began again - just as awful as before. Forty-two minutes it had taken - forty-two glorious minutes!

Ah, but we had had a wonderful time, hadn't we? We'd got through all the business we had planned to cover. We had enjoyed an excellent dinner - the audio capers having had no ill-effect on the excellence of the restaurant's kitchen. We had done our bit in the cause of suppressing noise pollution. And the Swazis, having shared in every nuance of the jest, had revelled in the fun of it for its own sake and would be going away with the conviction that not only did ICL have the right kit and the right ideas, they were also great fun to deal with.

There was, however, still to be a coda - a touch of final genius like the glacé cherry atop a flamboyant syllabub. The last few minutes of our meal passed in contentment; we were by this

time impervious to the ghastly racket which had recommenced. Digestion was already being accelerated by sheer happiness. But, as we rose to depart, our maestro produced one of his business cards, and made a small hole in it, into which he inserted the long-abstracted fuse. As we passed from the scene this combined object, with a lordly gesture reminiscent of an absent-minded prince bestowing a meaningless largesse on an insignificant and scrofulous beggar, was quietly deposited on the nearer end of the nearer keyboard.

We paused in the reception area for final remarks and goodbyes before retiring for the night. There was a flurry, and twinkle-fingers appeared at a rush, his appearance showing only too well how difficult it is to portray a soul bristling with indignation when said soul's natural emotion is modest self-effacement and abject apology. Skidding to a halt before his target, and brandishing the business card and fuse, he uttered the surprising (but, actually, in the circumstances, rather well-chosen) words : "From now on, you are either my friend or my enemy!" Drawing himself to his fullest height, and thus from almost eighteen inches above his puny challenger, the majestic Mokaila, peering down the full length of the imperious Mokaila nose, pronounced the ultimately crushing Mokaila response: "You are *too small* to be my enemy!"

That, in the simplest of terms, is what happened. There could not have been a better way of confirming that work for ICL was always fun