

Bits & Bytes

No 2

Critical Mass?

The response to the first edition of "Bits & Bytes" has been very favourable, especially from ex ICL people in the NORTEL pension fund.

Bo Upton the "Diary" editor was kind enough to include an article in the winter edition offering copies of "B&B" to anybody who sent an SAE. To date over 100 copies have been sent out. ICL will fund the distribution of future editions of "B&B" to those people in the NORTEL fund who have taken the trouble to write to me, so there will be no need for SAEs

Another reunion group, in Stevenage, has come to light. The details are in the reunions section

As I'm sure you will have noted in the national press, there are considerable changes happening within the ICL group, even as I write this. Being a six monthly publication makes it very difficult to be completely up to date and a great deal of the "news" will have been overtaken by events. For completeness the "old news" of ICL is retained so that you can see the overall picture

The size of this second edition of "B&B" is double that of the first, so thanks must be given to all those who have contributed letters and articles. If you haven't yet had the courage or inclination to write, remember that without material the next edition in the autumn will be very slim.

Adrian Turner

ICL ORGANISATION 1996

Following Sir Peter Bonfield's move to British Telecom Keith Todd, the new ICL Chief Executive, announced the structure of ICL for 1996 in January.

The number of operating units has been reduced from ten to six.

Technology

Group Executive Director
Volume Products
High Performance Sys
D2D
Technology Plc

Ninian Eadie
 David Mills
 David Teague
 Alistair Kelly
 Marie-A. Van Ingen

ICL Enterprises Group

Richard Livesey-Haworth Group Executive Director

ICL Enterprises
Enterprise Utilities
Enterprise Industries

Tim Gibson
 Anita Gracie
 Mike Stares

Enterprise Programmes
Enterprise Government
Local Gov't (UK)
Resource Services
Enterprises Europe
ICL Benelux
ICL Denmark
ICL France
ICL Ireland
ICL Norway
ICL Portugal
ICL Sweden
ICL International
ICL South Africa
ICL Finland
Autonomous Businesses
Enterprise Technology

Colin Aldridge
 Brian Smythe
 Richard Masters
 David Sillitoe
 TBA
 William Fisher
 Steffan Ibsø
 Edgard Taureau
 David McDonald
 Arvid Oye
 Carlos Afonso
 Hubert Lindblom
 Robin Hacking
 Fred Luyt
 Henry Ehrstedt
 David Wimpres
 Andrew Boswell

ICL Sorbus

Chairman & Chief Exec.
ICL Sorbus UK,
Managing Director
Datacentres
Desktop Services
Power of 4
Engineering Services
Distributed Systems

Paul Whitwam

David Palk,
 Neil Bagshaw
 Neil Allpress
 Andrew Auty
 John Polatch
 Dave Smith

ICL Sorbus in Europe

President
ICL Sorbus Central
ICL Sorbus Benelux
ICL Sorbus France
ICL Sorbus Scandinavia
ICL Sorbus Italy

Franck Armaingaud

Paul Richman
 Rob Brouwer
 Noel Saille
 Orjan Lindh
 Maurizio Tomaso

ICL Sorbus Finland
ICL Sorbus Portugal
ICL Sorbus Ireland
ICL Sorbus Spain

Heikki Kotilainen
 Luis Moura
 John McHale
 Julio Navarro

ICL Retail Systems

President

Rod Powell

ICL Financial Services Systems

President

Nuno Caldeira

Outsourcing

Acting President

Nigel Hartnell

ICL Further Reorganisation

The announcement of ICL's financial results on 8 March 1996 included major changes to the company structure which alters the content of the previous paragraph. Until all the details are published I will

not attempt to modify the structure published in January.

The basic message from Keith Todd is that ICL will focus on

- mainstream systems and services activities
- a global partnership with Fujitsu to exploit Teamware
- a launch of a new interactive services business
- the demerger of Volume Products to a new company led by Fujitsu.
- the spinning out of D2D, the group's contract electronics manufacturing business.

ICL Personnel Director

Don Beattie who was Personnel Director for eleven years has left ICL to become Chief Executive Personnel of The BOC Group.

His successor is David Berry, formally Managing Director ICL Enterprises, who took up his new appointment on 1 March 1996

Workplace Technologies

The management of Workplace Technologies, a subsidiary of ICL specialising in cabling and network installations, has engineered a buyout with the backing of the 3i venture capital group. Under the terms of the agreement Workplace Technologies will continue to provide network integration services across ICL's full range of business.

Workplace Technologies employs 120 people and has offices in Stevenage, Slough, Kids Grove, Wakefield, and Edinburgh. It was born out of the ICTS division in 1992 and originally specialised in structured cabling. That is still a fundamental part of its business, which has been broadened to cover network design and integration.

Among the company's clients are the Scottish Office, Manchester City Council, RAF Wyton (which runs the largest fibre network in the UK) and the new Hong Kong airport. The company also played a part in the setting up of Camelot, the National Lottery operator.

Its turnover for the year ended December 1994 was £37.5m with profits at £2m. No details of the financial arrangements with ICL were revealed, as has been the case with previous sell-offs.

In December 1994 ICL sold off **Guardian**, its disaster recovery company to the management of that company. A year earlier ICL sold its stake in **INS**, the UK's leading supplier of EDI (electronic data interchange) services.

ICL Medical Portfolio Division Sold

Siemens Nixdorf have bought ICL's medical systems division. Under the deal SNI will acquire 120 staff and 120 customer sites. The ICL business was worth around £17million a year and was based mainly on the VME based IRC-PAS patient administration system.

INTERNET

In response to our request in the first edition, two "surfers" have submitted their views of the net, which should help readers understand what is involved

It all started in 1969 with ARPAnet, a project by the US Department of Defence. It was originally a project

to build a computer system to withstand enemy attacks and link to other defence departments. They surmised that by dispersing the network over a wide geographical area, using a web of computer connections, the system would continue to function even if sections were destroyed.

It was used by universities as well as government departments, was a great success and the number of computer networks was expanded to accommodate commercial users. Communication between many varieties of computers was made possible through the introduction of a standard Internet Protocol (IP) which simply allowed computers to send messages to each other by putting data into an "envelope" and addressing it to the respondent.

So the Internet is merely a collection of computer systems and networks that can exchange information using a common Internet Protocol.

This was fine but as the number of documents increased over the network users found it almost impossible to locate items or threads of interest in an acceptable time scale. The idea of a World Wide Web of computer document pages that could be accessed as if they were (from the user's point of view) a single document source, was implemented. This is made possible by yet another protocol called Hyper Text Transfer Protocol (HTTP) This protocol allows pages of text to have HTTP links embedded in them which allows users to click on a topic of interest within a document and to be transported to the host computer system holding that page without realising it. Windows users will be familiar with the hypertext link concept, when they use the Help facility and click on highlighted words for more information.

I subscribe to the CompuServe network, one of many Internet Service Providers (ISPs). I pay \$10 a month and for that I get 5 hours free on line time and Email. For a non professional user this may be enough; if not additional time is charged at an hourly rate of about \$2 to \$3. I use it first and foremost for Email links to my family overseas and former ICL colleagues via Internet to ICLMAIL.

Secondly I use it to join a number of forums of special interests, some technical like the Microsoft forums, some non technical like genealogy, sex and travel. Finally it means that I can converse with my grandchildren on equal terms as they become experts in surfing the Internet.

Harry Hainsworth
1006271,1607@compuserve.com

From Dave Sedgley ex CS

I note the request for a simple introduction to the Internet. As it happens a week ago I was sitting in California scanning the ICL Web pages on a PC belonging to the owner of a house I had swapped with through an introduction arranged via one of the CompuServe forums.

I certainly believe that it can be a very useful tool in maintaining contacts both within and outside the company. I suppose many ICL pensioners might view it as an expensive toy. However all you need is a PC that will run Windows 3.1 and a modem and of course a telephone line. Probably an minimum outlay of £600 would get a very adequate NEW system.. The majority of PCs that ICL make redundant would also be suitable; perhaps they could offer them to interested pensioners.

One of the snags is that you have to join a "service provider" costing about £6 per month. Much is made of the hype of "surfing the net". However until BT provide free local calls as in the USA the fancy graphics/hypertext side of things is best left alone. I use OLRs (Off-line readers) which permit me to visit all the CompuServe forums I am interested in and read the Internet News Groups within a couple of minutes of "on-line" phone time. My wife has yet to note any increase in the size of the phone bill and moreover the CompuServe access numbers are not listed on the bill, so you can appreciate that the call times are minimal. The advantage of on-line access is that you can communicate all over the world for the price of a local phone call. I would also challenge anyone to have an interest that is not catered for within one of the Forums or Newsgroups

I would like to suggest that "Bits & Bytes" publish the Email addresses of those pensioners who currently have access and who would be interested in communicating via the Internet. Maybe ICL could fund or resource the Pensioners Representatives to get on-line.

If anyone has any questions as to a suitable OLR or the advantages or drawbacks in getting on-line I would be pleased to assist them. I would also advise anyone who has a PC to get a modem; the usefulness of their PC will increase beyond all their expectations.

**Dave Sedgley 01420 562304
100256.2034@compuserve.com**

REUNIONS

*It has been pointed out that **any** serving or retired ICL person is welcome at these reunions but I also know that it is better to attend a gathering of people with whom you have something in common.*

Punched Card Reunion Group

The next Bi-Annual meeting will be at 11:00 on Tuesday 8 October 1996 at STE04 Cavendish Road Stevenage. The format will be similar to previous years with plenty of time to reminisce with old friends and colleagues.

120 people is the maximum number that can be accommodated. Coffee and a buffet lunch will be provided. Tickets are available on a first come first served basis by sending a cheque/postal order for £7 and an SAE to: Adrian Turner, 5 Nun's Acre, Goring-on-Thames, Reading. RG8 9BE 01491 872012.

ICL Central London Group

The next gathering will assemble in The Fox at Epworth/Paul Street from 12:00 on 17 July 1996

John Doo 01245 259862

West Branch Engineers

Eric Reynolds 01452 712047

East Grinstead 81 Club

Bert Gill 01903 763370

West Kent Engineers

Ron Harding 01732 761076

East Midlands UB40s

Brian Skeldon 0115 9727835

Oxford Region

Albert Brook 01235 531267

Stevenage Group

New Information

Currently meet at the Wagon and Horses in Gravely, north of Stevenage on the old A1, at lunchtime on the first Thursday in the month

Dennis Evans 01462 811273

Some things don't change

Having spent a lifetime fault-finding on Data Processing Machines, from Card Punches in 1946 to printed circuit motherboards in 1994, I note that the old enemy the "Dry Joint" has never gone away. To stimulate old memories here are a couple of examples, with a forty year interval.

In 1954 at Salford, I installed a new 417 Transfer Interpreter, a machine made by Bull and marketed by the British Tab. 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 unit, and 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 plug-in relays. Intermittent mis-compare faults gave a lot of trouble, and were eventually found by stopping the drive motor, and with power on, turning the machine by hand to the point where the compare relays were sensed. Then when the relay panel was flexed one relay could be heard ticking on and off due to dry soldered joint on the backplane.

Then in 1994 at the Repair Centre we came to a problem on 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, In/Out controllers and slots for up to 512Mb of RAM. The fault report said intermittent errors, and pressing on the board while the Diagnostic tests were run caused error messages. These pointed to a particular component, an IC about one inch square with 200 pins soldered to individual pads on the surface of the PCB. With power off and using a magnifying glass and a dentists fine pointed probe each pin 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?

Peter Porter Market Drayton

LETTERS

Contributors are asked to give a telephone number on which they can be contacted.

West Gorton Revisited

Thank you for "Bits & Bytes" which I found to be most interesting. Regrettably, but inevitably, most of the names remembered both in this magazine and "Diary", appear in the obituaries column, three in this edition. However the name of Brian Parker is well remembered, together with Jean Clough at West Gorton. I would like to make contact, although at 74 I don't get around as much as I used to. Last year I was able to attend two meetings of the Computer Conservation Society, held in the Museum of Science and Industry in Liverpool Road Manchester. They too have a Ferranti Pegasus which they hope to restore. Old colleagues there included Peter Hall, Frank Sumner, Charlie Portman, Ken Turner, Charles Lindsey, Ron Lane, and Roy Duffy, one of the speakers. I was also in a party of 12 members who were invited to West Gorton for a tour of the labs. We were met by directors Tom Hinchcliffe and John

Allanby, who gave up most of the afternoon to show us round some of the test facilities and the latest Processors, water cooling and all! Meeting many old friends it was tempting to stop for a chat, but it was only possible to exchange a few words with each.. It was good to see that ICL was in very good heart and gratifying to think that I had played some small part in its past.

Frank Cooper Sandbach

Hollerith 555 Best Machine

Many thanks for forwarding me a copy of "Bits & Bytes" which I found most interesting.

I don't think we ever worked together, but I think we conversed on the phone. After doing the standard "Hollerith" machines I was the first engineer from the West Country to be trained on the 542 and 550 followed later by the 555, 1201 and 1202. I became the Regional Electronic Supervisor and supported these machines for many years. Another type I travelled the country supporting was the 558 (ex Powers), and without hesitation I would nominate this as the worst machine I ever worked on! It would be very interesting to find out what other engineers think. Without doubt my favourite was the 555.

I note that Bill Williams is on the editorial committee. If it is the "Clifton Street Bill Williams", he will remember me as the secretary of the Engineers Union Group.

If possible I would like to go on your mailing list and thus keep in touch.

Derek Pring Lostwithiel

In Outer Darkness

I was delighted to see the note about "Bits & Bytes" in the recent Nortel "Diary". Since the Japanese took over ICL I feel members of the original ICL Pension Scheme have been cast into outer darkness, as far as news and information are concerned, so I should very much like to receive a copy of "Bits & Bytes". Is there any way that I can turn this into a standing order for future editions?

Iain Drummond Chalfont St. Peter

OBITUARIES

Tom Griffin OBE Remembered

First let me say I appreciated and enjoyed receiving and reading my copy of the first issue of "Bits & Bytes" and my congratulations go to the editorial committee for making it happen.

Inevitably my attention was drawn to the Obituary page and I was very sad to see the names of so many friends and colleagues who have passed away in the recent years. I was particularly upset to see the name of **Griffin, Thomas Day** 74 30 Jan 95 in the ICL (unidentified locations) section. I know from a number of contacts I have had with past and current ICL people that this is a widely shared feeling.

It is for this reason that I felt compelled to put pen to paper and pay this tribute to Tom Griffin - the first Customer Services Director

I must start with Tom's Major achievements which can be simply summarised as follows:

- He gave the ICL Field Engineering organisation pride in itself.
- He positioned Field Engineering as a key contributor to the ICL group, with ICL Sales & Marketing, who definitely at that time saw engineers as second class citizens.

- For the first time he made engineers business aware.
- He had the vision to establish contacts and relationships between the Field Engineering groups around the world.
- He focused engineers on understanding and responding to customer requirements.

I'm sure many of you who had the privilege of knowing and working with Tom could add to this list, but I will stop there and reflect on Tom's time with us, and his contribution to the growth from Field Engineering, through Customer Services, to ICL Sorbus as we know it today.

Tom appeared at the then ICT Field Engineering Headquarters in Letchworth as the first Director of Field Engineering in the autumn of 1967. The very fact that we had someone at this level for the first time as our boss in itself gave engineers a lift

Many of you will also recall, with respect and affection, his right hand man Alec Trussell

I remember well one of the first things Tom did was to call us together for a meeting in the Management Canteen and told us what his strategy was and what he expected of us. The thing that really shocked us was when he said that we would be running Field Engineering as a money making business. This concept was entirely new to us, as it was generally accepted that Field Engineering was a necessary overhead. We would now have to get used to budgeting and other strange financial practices.

As time progressed Tom continued to develop Field Engineering, its internal and customer image and its profit contribution to the company. He also changed the organisation name from Field Engineering to Customer Engineering Services Organisation, henceforth known as CESO. Later, under Tom's leadership, CESO was given Corporate Division status and the name was changed again, to Customer Engineering Division (CED) to reflect this.

In 1979 CED was split into two units, one HQ unit responsible for Product Introduction and Improvement and the other responsible for Service Delivery and Support. The latter became part of ICL (UK) with Alan Rousell taking over from Tom as ICL (UK) Services Director.

Alan Rousell inherited a unit contributing well in excess of £60 million revenue from the loss making position Tom took over when he arrived on the scene with Alec Trussell in 1967. Alan Rousell inherited a professional organisation which he developed, and was then further evolved by his successors, John Proctor, Roger Burrell and now David Palk, into ICL Sorbus.

This is a key company within ICL, and in my view the leading IT Services supplier in Europe.

The original architect of this successful organisation, with the vision and management style to give it bedrock of success, was Tom Griffin. Long may he be remembered.

Alan Gilman Royston

ICL staff who were in the Northern Telecom Pension Plan

Taken from the autumn & winter 95 editions of the Northern Telecom "Diary".

Ashton	Ormerod	Margaret	4/6/95	72
Baric	Brooks	Anthony	28/7/95	51
Belfast	Goodall	Edward	9/8/95	79

BIR	Jennison	Robert C	6/9/95	57
BRA	Nappin	Fred	14/5/95	67
BRS01	Cann	David E	8/9/95	65
Castlreagh	Forbes	John	20/6/95	85
CRO01	Bullock	Gordon.	23/7/95	74
Duckinfield	Jones	Anna	5/10/95	66
GLA01	Christie	Reginald	27/10/95	78
KID	Whitehurst	Thomas	22/10/95	79
KID	Hobbs	John	1/6/95	75
LET	Bifield	William	16/2/95	74
LET	Campbell	Samuel	22/8/95	79
LET	Castle	Claude L	8/4/95	82
LET	Robbins	Arthur .	22/5/95	81
LET	Smith	Desmond	15/5/95	63
LET	Topham	Leonard	29/6/95	76
LET02	Mercer	John V.	9/7/95	75
LET02	Byers	Frank	21/7/95	74
LET04	Fedenczuk	Michael .	7/11/94	77
LET05	Beeching	Donald	27/8/95	66
LET05	Davies	Arthur L	12/8/95	80
LET05	Dodsworth	John L	14/10/95	90
LET05	Anderson	John B	9/8/95	74
LET06	Amos	Eric W	24/7/95	83
LON	Lines	John B	2/9/95	69
LON01	Johnson	Arlen R	13/6/95	59
LON11	Bare	Clifford	15/4/95	81
LON12	Webber	Douglas	19/8/95	79
LON13	Bickley	William	2/10/95	77
LON30	Tarbard	Arthur	29/7/95	75
MAN	Rossiney	William	1/9/95	77
MAN	Tipton	Fred	26/7/95	70
MAN01	Broad	William	15/8/95	65
MAN04	Heywood	William	29/7/95	66
MAN05	Darbyshire	Alan	10/6/95	74
MAN05	Davies	Charles.	17/6/95	79
MAN05	McConville	Albert	4/10/95	73
Newport	Macaskill	Kenneth	6/10/95	67
Plymouth	Jones	John	11/10/95	67
Sheffield	Brain	Albert	5/7/95	84
Slough	Morley	Robert	2/8/95	73
Stannier St	Perry	Roland	22/10/95	77
Stevenage	Norborough	Leonard	26/9/95	92
Stevenage	Collins	James	25/10/95	89
Stevenage	Mack	Violet E	1/11/95	78
Stevenage	Fox	Harold	Jan 93	
Windsor	Wells	Eileen A	5/3/95	44
Winsford	Brandreth	George	9/8/95	78
Other ICL Locations				
	Guiver	Reginald	15/5/95	73
	Hoare	Ernest I	15/6/95	71
	Horton	Kenneth	8/10/95	75
	Leverington	David D	19/4/95	65
	McDonald	John A	18/10/95	70
	Mbelu	Francis	20/5/95	60
	Sharpe	Thomas L	16/6/95	92
	Taylor	Richard H	26/4/95	62
	Weston	Lawrence	29/10/95	67
	Williams	Alice P	7/3/95	69
	Williamson	Yvonne D	4/6/95	77
	Wingrove	Gordon L	13/9/95	67
	Woollerton	Mary E	11/10/95	76

ICL Group Fund Pensioners who have died since the first issue of Bits & Bytes

EDI04	Adams	William R	9/11/95	61
KID01	West	Ronald A	4/12/95	64
KID02	Allen	Derek W	5/1/96	55

EXE04	Furneaux	Brian A	14/2/96	58
BRA01	Carey	John G.	7/3/96	67
Homewk	Kavanagh	Colin	1/11/95	66
WAR02	Hynes	John M	19/11/95	64

LOCKED IN A PUB

What a thought! But it did happen recently to two members of the Oxford Reunion Group.

At the conclusion of the lunch all the members of the group left the pub at 2:30 (closing time) except for two who needed to wash their hands. As usual the chatting continued in the car park, until there was a shout of HELP from one of the windows.

The two lads had been in the gents when the barmaid locked the pub, before checking that everyone was out. We tried our keys on the door, no luck. We shouted up at the landlord's flat no response asleep or out.

How did they get out? Well after the young lady had locked the front door she posted the keys through the letter box. The were found by the trapped gentlemen who used them to unlock the door and then reposted them through the letter box. One of the detainees was Ted Evison a former CPO on HMS Bulwark who resisted the urge to splice the mainbrace! Honest lot aren't we!

Albert Brook ex Oxford Region

NEW BOOKS

User Driven Innovation

The World's First Business Computer

by David Caminer, John Aris, Peter Hermon, Frank Land and other members of the team.

This new book about LEO is a first-hand account of how this astounding user-innovation came about. It is a flesh and blood, warts and all story related by the participants, brimming over with the enthusiasm that enabled the unlikeliest organisation to lead the way into the future that we are all familiar with today.

The book was published in March by McGraw-Hill Book Company Europe at a price of £35.

An ICL Anthology

Edited by Hamish Carmichael

This eagerly awaited anthology which Hamish has been assembling is now available. It contains hundreds of amusing, interesting and serious anecdotes of ICL and its constituent companies.

Available only from the publishers

Laidlaw Hicks Publishers, 63 Collingwood Avenue, Tolworth, Surbiton, Surrey KT5 9PU

The price including postage and packing is:

UK : £11.50

Overseas : £12.50

Where are they now?

A number of people have expressed a desire to locate old colleagues, but I also appreciate that some people would not like their address and telephone number to be publicised. I am willing to publish a list of names of people who want to be contacted with their home telephone number, but unless somebody can tell me how to maintain privacy I do not think that I can do it the other way round.

Spare part required

I undertook to overhaul a not too old (has ICL label) "Hollerith" hand punch. All went well 'til I broke a punch pin whilst replacing them. Obviously I've completely lost my touch! Has any nice kind punch engineer got a punch pin for a hand punch lurking in an old box in the garage? If you have please get in touch with me:

Rex Baldry 01734 788506.

The Computer Conservation Society

This is intended to amplify the rather brief mention of the Society which was included in the first issue of Bits & Bytes

Formally the Computer Conservation Society (CCS) is a co-operative venture between the British Computer Society and the Science Museum of London, having been founded as a specialist group of the BCS in September 1989. Its aims are:

- To promote the conservation of historic computers and to identify existing computers that may need to be archived in future
- To develop awareness of the importance of historic computers
- To encourage research on historic computers and their impact on society.

Membership is open to anyone interested in computer conservation and the history of computing.

There are a number of Working Parties on specific computer restorations and early computer technologies and software. Subjects covered include Elliot 803, Elliot 401, Pegasus and the S100 bus.

It publishes a periodical bulletin called Computer Resurrection. This is edited by Nicholas Enticknap, whose name will be familiar to many readers of computer newspapers. The most recent issue dated Winter 1995/96, contains articles on :

The piece of Babbage's original Difference Engine which was auctioned at Christie's in October 1995.

- DEUCE its life and times.
- Telephone Traffic and Other Hobbies - an account of some STC projects which were important in the design of the ZEBRA computer.
- Experiences with Pegasus 1

Forthcoming events listed in the latest Resurrection include the fortnightly guided tours at Bletchley Park, two meetings of the North-West Group in April covering 'Industrial research in the Information Technology field' by Gordon Scarrott and the 'Small scale experimental machine' rebuilt by Chris Burton. There is to be a whole day seminar on the ICT/ICL 1900 series on Thursday 30 May, 11:00 to 17:30, at the Science Museum.

Anyone who is not already a member of the CCS but who would like to attend should contact : **George Davis 0181 681 7784**

Colossus

Some of you may have already heard that at Bletchley Park we are constructing a "near as possible" replica of the original Colossus. Large numbers of the familiar EF36, 6V6, 807 valves, PO relays, Uniselectors etc. are being used.

Bletchley Park is where the enemies "unbreakable" codes were broken. It is now accepted that the high level intelligence information obtained from the resulting decrypts shortened the second world war by up to two years. The Hollerith Bombes and Colossi

were the main systems used to break the enemy's codes. The Bombes are being given serious attention but I am not a qualified person to report on this area. However what I am involved in is the Colossus rebuild. It is important for us mature members of the British computer industry to recognise that Colossus was the world's first computer and it was only the need for national security restrictions that allowed the Americans to make the erroneous claim that their ENIAC was the first.

Tony Sale at Bletchley Park is heading up the rebuild project and already has a lot to show visitors with one of each panel type working. However there is now a lot of replication work to be done and I have offered to try and find helpers. So if you are one of those who want to assist with some uninspiring and unpaid mechanical or electrical construction work on site or at home then please contact me:

John Harper at 7 Cedar Avenue, Ickleford, Hitchin, Herts, SG5 3XU

Remember the 1300?

It was around 1962 when I was the manager in charge of the engineering effort at the new computer centre at Putney Bridge House

The 1301 was ICT's first attempt at a transistorised computer. Designed by ICT with the printer, drums, card punch and magnetic tape made by ICT but the electronics contracted out to GEC.

We had two 1301 prototypes known as P1 and P2.

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

Maximum "Up Time" was demanded by the programmers at all times and we ran 3 shifts 7 days a week.

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 Tony Russell the 1300 engineering manager arrived. 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.

About a year later P2 was switched off for the last time with due ceremony attended by Tony Russell, Ernie Cutler and myself.

Frank Tilley Hitchin

BRYANT DISC FILE

When I read Adrian Turner's Technical Query in Bits & Bytes No1 October 1995 on the Bryant Disk File and in particular his exaggerated recollection of the disc diameter, I telephoned him. Having known Adrian for about thirty years I thought that I would pull his leg but somehow or other the discussion turned around to me agreeing to write an article. Why didn't I keep my thoughts to myself, I ask? Well here goes.

Some information detailed below are from memory and if any are wrong I would welcome corrections being published.

The Bryant which I spent most of my time on was installed at BMC Service, Cowley, Oxford around 1963. In fact I believe that BMC Service, now

Unipart, was one of the first commercial organisations in UK to run their business entirely on a computer without any fall back or resilience.

Looking back we would now say that the BMC Management were very brave and trusting to put so many eggs in one basket and whilst it said a great deal for their trust in ICT it also put a tremendous responsibility on those of us who had to keep the hardware up and reliable. Normally ten or eleven shifts were run each week but at stock taking time the machine ran for a week or more around the clock.

Generally our Bryant was very reliable although read errors sometimes became unacceptable. The main problem was with dirty heads and surfaces. Being right in the middle of a motor manufacturing plant, paint vapour etc. in the air was a real problem. In the event we ended up cleaning the surfaces with a great big paddle every weekday before the two shift operation. We also racked out all of the heads once a week to clean the actual head surfaces, often finding nasty greasy streaks on them. Retracting the heads so often created its own problem. The heads had to be put back in the same position that they were before otherwise data would be lost. The whole rack of heads had to be put back into position and the clamp bolts tightened with a torque wrench. What we didn't realise was that as we tightened up the heads were moving a very small amount and we were experiencing setting migration. We later solved this with a fixed setting jig made in the "Morris's" tool room.

Each week we had to check and if necessary send for the kit to pump up the hydraulic accumulators with Nitrogen.

The only unreliable part of the system was the Dowty hydraulic pump. This controlled its output by moving an internal moving swash plate which controlled the throw of the pistons which were set in a barrel much like a six gun. We had to change the pump about every six months or so. One replacement I recall was sent to us incorrectly assembled and it was about two in the morning before we realised what the problem was. Later Bryants had a simple gear pump with relief valve and this was much more reliable.

Now to some of the technical information that Adrian was seeking.

ICT offered the Type 1640 Bryant Disk File on the 1500 (RCA 301).

This came in four capacities of one to four modules of 22 Million Characters. For those who may have forgotten, many early systems including the 1900 worked with 6 bit characters. Later systems like 2900 and now your IBM clone PCs work with eight bit bytes.

Each module used 12 disc surfaces but all versions needed an extra 2 surfaces for system use. The one at BMC was the smallest version with 7 actual discs making up 14 surfaces in all. Of these 1 surface had fixed (not moving) heads for clock information and 1 surface had moving heads which were to identify flaws on other surfaces and provide alternative areas, or if a head went open circuit to provide a spare. This left 12 surfaces for customer information over which flew 6 heads per surface with the outer three doubled up in capacity to give 9 zones, as RCA called them, each sweeping 128 tracks. The heads were positioned over a given track by a very well engineered hydraulic actuator. This had 7 co-axial cylinders binary encoded

and each twice the length of the one surrounding it. By opening or closing the seven hydraulic actuator valves, any one of the 128 tracks could be selected. What was so impressive was that a massive amount of hardware could be moved to the correct position in 105 milliseconds (Average). Mind you it did take a 5 horse power motor to drive the hydraulic pump. The 33 inch diameter discs were rotated by a separate 3 horsepower motor at 1200 rpm.

On each track there were 10 sectors each of 160 characters. This actually multiplies up to 22118400 six bit characters. Transfer rate was 32Kch/s and Access time (latency) 25 mS (Average)

The overall size with Hydraulic Power Unit fixed alongside was:

- Height = 52"
- Length = 92"
- Depth = 46"
- Weight = 5000 pounds (approx. 2 tonnes)

The Bryant disk file was also used later as an alternative to the Dataproducts disk on large 1900s. It had an increased data packing density and hence greater overall capacity. From all accounts it was not as reliable as the 1500 version and there were some very serious physical failures reported. I used to say that this was due to not giving the disc the care and attention that we gave to our versions but I am not sure with the benefit of hindsight that this was fair criticism. At least the air contamination problem had been recognised because on the 1900 an environmental unit was available.

The 1900 models were 2803 Control Unit and 2805/3 Fixed Disc Store.

Capacities options on the 1900 were:

- 100 Mch (12 surfaces)
- 218 Mch (26 surfaces) and
- 420 Mch (50 surfaces)

The six heads were grouped into pairs as opposed to groups of 3 on the 1500 version. The number of sectors per pair were

- Inner - 6 blocks (76 Kch/s)
- Middle - 11 blocks (140 Kch/s)
- Outer - 15 blocks (190 Kch/s)

Most readers have got used to the incredibly rapid rate of development in the computer industry but it is still worth reflecting on some actual figures taken thirty years apart. Below I compare the Bryant which I worked on around 1963 with a modern fixed disc which I installed in my PC about a year ago and which is already dated.

	<u>BRYANT</u> <u>1640 FD</u>	<u>IBM PC</u> <u>Fixed Disk</u>
Capacity	22 MChars	546 MBytes
Disk Dia	33 inches	3.5 inches
Heads	12 x 6 = 72	12
Tracks per surface	128 x 6 = 768	1060
Sectors	20 outer, 10 inner	63
Price	~£30,000	<£200
Power	~ 10 KW	< 20W
Weight	> 4000 lbs	< 1 lb

On a more personal note it is good to reflect on my years at BMC Service. At the time it seemed just hard work but looking back it was a most interesting time. I was in good company and learnt a great deal. It certainly gave me a very good grounding for later

years when I designed my own fixed disc controllers for 1900 S and T series and then later on 2903. But that is another story.

John Harper Ickleford

WE ARE SURVIVORS!

(for those born before 1940.....)

We were born before television, before penicillin, polio shots, frozen foods, Xerox, plastic, contact lenses, videos, Frisbees and the Pill. We were before radar, credit cards, split atoms, laser beams and ball point pens; before dishwashers, tumble driers, electric blankets, air conditioners, drip dry clothes.....and before man walked on the moon.

We got married first, and then lived together (how quaint can you be!) We thought 'fast food' was what you ate in Lent, a 'Big Mac' was an oversized raincoat and crumpet we had for tea. We existed before househusbands, computer dating, dual careers, and when a 'meaningful relationship' meant getting along with cousins, and 'sheltered accommodation' was where you waited for a bus. We were before day centres, group homes and disposable nappies. We never heard of FM radio, tape decks, electric typewriters, artificial hearts, word processors, yoghurt, and young men wearing ear rings. For us 'time sharing' meant togetherness, a chip was a piece of wood or fried potato, hardware meant nuts and bolts and software wasn't a word.

Before 1940 'made in Japan' meant junk, the term 'making out' referred to how you did in exams, stud was something that fastened a collar to a shirt, and 'going all the way' meant staying on a double decker to the bus depot. Pizzas, McDonald and instant coffee were unheard of. In our day cigarette smoking was fashionable, 'grass' was mown, 'coke' was kept in the coal house, a 'joint' was a piece of meat you had on Sundays and 'pot' was something you cooked in. 'Rock music' was a grandmother's lullaby, 'Eldorado' was an ice cream, a 'gay' person was the life and soul of the party and nothing more, while 'aids' just meant beauty treatment or help for someone in trouble.

We who were born before 1940 must be a hardy bunch when you think of the way in which the world has changed, and the adjustments we have had to make. No wonder we are so confused and there is a generation gap today. BUT, by the grace of God we have survived!

ICL EMPLOYEE OFFERS

Insurance (House/Car/Travel)

Willis Coroon are ICL's Insurance brokers

0800 224422

Sun Alliance are offering discounts on premiums for ICL pensioners

0800 300 822 quoting ref 65F9416

Royal Insurance are offering discounts on House and Private car premiums

01622 691234

AA Membership

15% discount to ICL pensioners

01256 24872

Financial Advice

Fairmont Trust plc an independent financial advisory company offering a free consultation to ICL employees. Ring Tony Segaller for more information

01372 370000

PENSIONER REPRESENTATIVES

Jack Kane 21, Hazlebank Close, Liphook, Hants. GU30 7BZ

Bill Williams 98, Heddington Grove, Islington, London N7 9SZ

Editorial Committee

Hamish Carmichael 0181 337 3176

Jack Kane 01428 725169

Adrian Turner 01491 872012

Bill Williams 0171 607 9408

NEXT ISSUE

Copy for the next issue must be submitted by 27 September 1996

Published and printed by the ICL Group Pension Fund
May 1996