

R. S. R. S.

Newsletter

No. 98September 1967

Our New Computer

Two technological advances during the fifties were mainly responsible for the birth of the 'second generation of computers'. One involved the use of transistors to replace valves and the other, equally important in the computer field, was the development of ferro-magnetic core storage with its property of immediate access to any region of the store. The cores used are toroidal in shape (like a miniature 'polo' mint) and are threaded with wires in which current is made to flow. Depending on the direction of the current, the cores can be magnetised in one of two directions to represent 0 or 1 in the binary scale. These features are incorporated in the I.C.T. 1900 series of digital computers which also includes, as an insurance against obsolescence, a standard interface. This allows for extra storage or new peripherals - input/output devices - to be added without modifying the rest of the computer.

There are five basic requirements for every computer, namely input, storage, control, arithmetic unit and output. For input we will have a choice between punched cards, punched paper tape or magnetic tape. Storage, control and the arithmetic unit are all included in the central processor unit (C.P.U.) and additional back-up storage is available on magnetic tape. Output is catered for by a card punch, paper tape punch, line printer and graph plotter. All these physical units are referred to as computer hardware; software relates to the library services, available to users, which consist of programming aids like compilers and subroutines.

In the 1900 series, the basic unit of storage is a word of 24 bits, with an additional parity bit for checking purposes. Our computer will have a storage capacity of 32,768 (32 k) words and as each word requires 25 cores, a total of almost a million cores is present. Each core of a twentieth of an inch in

diameter - about twice the size of a full stop - is threaded by four fine wires, the work of nimble-fingered young women, I'm told! Part of this store is permanently occupied by a supervisory program known as Executive which reduces drastically the work required of an operator. Executive is loaded each morning prior to running the computer and is responsible for the allocation of program space, control of multiprogramming and peripheral transfers, interpretation of operator commands, monitoring of program errors and other less important tasks. Communication with Executive is achieved by a set of standard English statements entered by means of the console typewriter. As an example, the operator might type something like FIND JACK which would instruct Executive to search for a program named JACK on magnetic tape. Whilst a program is in the computer there is an almost constant flow of information between Executive and the operator.

The speed of our machine is much faster than its predecessor - Pegasus, but still appreciably slower - about ten times - than the mighty Atlas. Addition and subtraction of numbers of nearly ten million take 7 microseconds; multiplication and divisions take rather longer, but still less than 50 microseconds.

Extensive multiprogramming is possible and up to four main programs may be run concurrently with no risk of mutual interference. This feature is entirely automatic, the programmer having to write just the individual programs. The operator allocates a priority to each program and then Executive controls the switching from one program to another as input or output delays occur.

Any of the popular programming languages can be used for writing programs. PLAN is the basic language of the 1900 series and has a code similar to the internal code of the computer. FORTRAN, a scientific language, is written as a series of statements which take the form of simple English expressions like GO TO 7 and algebraic expressions. Each language has its own compiler which translates into machine code. We expect to use mainly FORTRAN with some PLAN.

The computer should be delivered to its rather hygienic looking air-conditioned quarters in mid-October and if all goes according to plan, we should be running our own programs by the end of November. Programs will be handed in at reception and then run on the computer by two trained operators.

Finally, the name of our computer. With such a performance it ought to sport something better than the plain number 1905. Such a comedown from the Pegasus and Orion of the first generation.

R. W. Smith

"The Tarnished Mirror"

Not for me your grovelling pity,
Not for me your insipid sorrow,
Not for me your dead tomorrow,
Not for me your lack of faith!

Keep your death, it hath no meaning,
Keep your friends, for they are dead,
Keep your Bacchus and his intoxication
For he is worthless as the dead.

Thou that didst bring me low,
Thou that wert fearful of me,
With my passion I let thee go,
Thy way through darkness till thy dawn breaks.

I say not goodbye, but come quickly,
Lest thou dost die in thy night
For Life is, and has, its meaning
If you look for it.

Be ye human or a fool,
A person or a tool?
It is thy life, look after it.
Remember me not, but see me as I am.
Rejoice when I die, for then I shall be
Beyond the reach of Man!

Zarathustra

A Sermon from the Depths

Gather round my brethren while I relate to you a history.

Once there was a young man who dreamed of a world that was to come,
a world of promise and justice. He awoke to find the world did not accord with
his dream. However, his reason did not allow him to accept the world as it is,
and so he built an inner world for himself.

At first progress was swift, but as he neared maturity, his inner world
began to demand that things should be as in the past.

The struggle commenced, with bizarre results.

What was he to do? His inner world was now the prison of his soul,
which languished in the depths, bemoaning its fate, inflicted by its own hand.
Thus, the hand of fate was for him attached to a human arm.

This is history, but what is its lesson?

The lesson is this - do not make ideals your crutch to permit you to
hobble through life, for they are liable to break. Learn to walk in dignity
and self-respect, for are ye not the highest on the Earth?

Z.

STAFF NEWS

Congratulations to:

Brendan James on his engagement to Miss Shirley Fry of Southampton.
The following on their Academic Successes:

- R. Adlam, Mechanical Engineering Technicians Part I
- R. C. Dorey, Mechanical Engineering Technicians Part I
- R. J. Knight, B.Sc. (General) Part I
- R. R. Lucas, Ordinary National Certificate in Engineering
- R. O. O. Marshall, Ordinary National Certificate in Engineering
- R. I. Patterson, Higher National Certificate in Electrical and Electronic Engineering
- A. Thackray, Electrical Technicians Part I
- S. J. Thompson, Ordinary National Certificate in Engineering
- Mrs. B. M. Tew, now Senior Cook

Welcome to:

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|-----------------------|------------------------------------|
| D. W. Hardy | Non-Perm. A.E.O. |
| Miss P. E. Mead | Non-Perm. Shorthand Typist |
| T. Edwards | Non-Perm. A.E.O. |
| Miss P. Panchapakesan | Perm/A.E.O. |
| A. G. Taylor | Perm. H.Ex.O. |
| J. R. Norbury | Perm. S.S.O. |
| Miss W. M. Fry | Non-Perm Personal Secretary |
| E. D. Price | Non-Perm. C.O. |
| Mrs. M. T. Parissien | Non-Perm. C.A. |
| Mrs. K. E. Shand | Non-Perm. C.A. |
| I. Innes | Non-Perm. E.O. (ESRO) |
| Mrs. L. R. Loudensack | Non-Perm. Supervisor Canteen Asst. |
| J. A. Murphy | Non-Perm. E.O. |
| K. W. Starr | Non-Perm. A.E.O. |

Resignations:

- | | |
|---------------------|---------------------------------------|
| J. R. E. Kenyon | Est. E.O. |
| Mrs. F. M. McCreery | Unest. Shorthand Typist. |
| H. L. Collin | Perm. S.O. |
| A. D. Johnstone | Temp. S.O. |
| S. Roberts | Perm. S.A. |
| J. A. Parton | Perm. A.E.O. |
| M. Purvis | Temp. S.A. |
| M. J. Hunt | Temp. E.O. |
| G. F. S. Heaney | College based Sandwich Course Student |
| C. S. Clarke | Perm. A.E.O. |
| J. E. Pearson | Est. S.S.O. |
| W. M. Curtis | Est. E. O. |
| C. P. Kerr | Non-Perm. C.O. |
| Miss M. J. Day | Non-Perm. A.E.O. |
| Mrs. E. M. Martin | Non-Perm. C.A.(P.T.) |

R.S.R.S. and 007

The R.S.R.S. may have done several odd things in the past but now it appears we have entered into the exciting world of James Bond. Singapore staff especially may like to know that in the recently released 007 thriller 'You only live twice', and here I quote from the dialogue, 'our tracking station in Singapore' is credited with providing the first clues to the origin of a mysterious object in space that destroys manned space craft launched by the U.S.A. and Russia. The loss of these spacecraft nearly causes war to break out between the two powers, but to say more would spoil the plot for those who may wish to see the film.

M.C.

Fog Index

Referring to Pea-souper's provocative article, critical commentaries exhibiting indices exceeding thirty one presumably regarded as unintelligible and editorially unacceptable, and are accordingly withheld.

Dolly Syllabic

SPORTS AND SOCIAL CLUB NEWS

Bridge Club

We will be holding Bridge evenings in the canteen at least once a month during the winter. Players of any standard will be welcome and novices may gain tuition from regular players in the bar at lunch time. Notices of our meetings will appear on the S.S.C. board.

M. R. Bowman

Cricket

The last match of the season was played against an ICI research team at Stoke Poges. RSRS batted first and scored 62 for 7 wickets in 12 overs, the top scorer (yet again!) being May with 27 n.o. ICI only narrowly failed to get the required number of runs, and were all out for 59. For RSRS, Harrison took 3 wickets for 10 runs and Thomas 4 for 13. A feature of this match was some excellent catching by both sides; ICI were assisted in this respect by substitute Moosajee who took 5 catches in all.

Our playing record has improved considerably since the inauspicious start to the season. Of the six matches played against external teams, four were won and two lost. In addition there were three internal matches, including the single wicket competition.

Before putting a full stop against the season's activities, I feel we owe a vote of thanks to Brian May who will soon be leaving RSRS. Brian has put much effort into the cricket section and his enthusiasm will be missed next season. In addition, of course, he has captained the side very ably and has proved to be our most successful batsman. So Brian's services will be difficult to replace, but I feel it is quite likely that next season he will be returning to RSRS with a team of weather men-cum-cricketers.

Graham Thomas

Badminton

This season badminton will be played on Thursday evenings from 7.00-10.30 p.m. in the Baldwin Institute, Eton. The first evening will be on 28th September. The charge will be the usual 3/6 per evening which includes the cost of tea. Racquets will be available for hire at 6d an evening. Anyone who has not played before but would like to 'have a go' is welcome. If you would like any further information please see Veronica Lovell in Spur D or Malcolm Chivers in Spur A.

Motor Club

October rally - an afternoon rally is being planned for Sunday 22nd October - watch the notice board for further details.

The motor club site is progressing rapidly now, but more volunteers are welcome to join in and help, evenings or weekends. Refreshments can be obtained for anyone staying after work.

Colder weather and darker evenings warn the motorist that winter is approaching - time to buy your antifreeze! The club will have CSMA Royal Snowdrift antifreeze available, by the pint or gallon tin. This is a top grade corrosion inhibited product, comparable with 5/- per pint Bluecol, and will sell at about half that price. The normal mixture is 25% antifreeze, giving protection to -26°C (-15°F). Amounts required by various cars are shown in a chart on the notice board.

E. Golton

Tennis

As evening tennis will finish at the end of September, we hope to play on Saturday afternoons during the winter season. To start the ball rolling, we will have a tournament to decide Smith Rose points on either 7th or 14th October whichever attracts most entries. For details, see the Sports Club notice board.

Some subscriptions and visitors fees which are still outstanding would be much appreciated by our Treasurer, Dorothy Preece, Room 33.

R. W. Smith.

LETTER TO THE OUTSTATIONS

Dear Colleagues,

It must be admitted that some feeling of relief came to the writer on seeing the limited space available for this letter. Of course writing to you is never a bore, (well hardly ever) but the Muse, never very active, has failed to come up with news for comment or comment for news.

"Autumn is upon us", I could have gaily begun, 'What of it', you might reply; 'More to the point if the sun had remained at its summer altitude, that would be news indeed.' So much for that gambit then. "You will be pleased to learn that E spur" 'So you said the other month! Well then, "Did you know that that girl" no we can't use that. Already you see we have descended to below stairs gossip about people.

What then? I know; "It must be admitted that some feeling of relief" Honesty is the best policy on this occasion even for,

Yours sincerely,

The Editor