ACE.2 attached ×
MLO/127/55

C/- Government Communications Headquarters,
Oakley,
Priors Road,
Cheltenham, Glos.

28th July 1955

PERSONAL AND CONFIDENTIAL

Dear Mr Thompson,

The attached letter has been shown to Robinson and Watson, to XR and to X, and after a certain amount of censoring, has been agreed. One point however for which no one would take responsibility is a figure of £5,000 for the cost. I mention it, in confidence, because it seems to be a fair approximation. from what I've heard on the grapevine.

I have been learning the art of programming for two or three weeks now and am enjoying it. The broad outline is easy enough to understand but there is such a mass of detail which must be so meticulously observed that I feel it will be some months before I develop any proficiency.

My instructor is Dr. Ivan King from NSA who will be in GCHQ till January 1956. His lectures are attended by XR, XM and a couple of others who are really just sitting in, but I am the only one receiving personal tuition.

King is going on leave on 29th August and I am also proposing to begin my annual leave from that date.

Moss has seen these letters (in fact, he has typed them) and fully agrees their content.

Yours Sincerely
AG Eastway

R.N. Thompson Esq.,
Defence Signals Branch,
MELBOURNE

P.S. I hope I haven't given you the impression that the machine is no good as it is - that was not my intention. It's just that with a plugboard we'd get a great deal more work out of COLOROB.

1.

1H to retain - I have a second copy.

RJ.

MT

C/- Government Communications Headquarters,
Oakley,
Priors Road,
Cheltenham, Glos.
28th July 1955

ACE-2

TOP SECRET

Dear Mr Thompson

This is not the promised report on COLOROB but merely some details which probably, for one reason or another, have not been included in signals. Some of this information may be of value now that MH is enquiring about the time it is expected to take to switch from one programme to another - and some, of course, you may have had already from Strath.

At present no very accurate estimate can be obtained of the time required to change from one programme to another but it is not just a matter of a few minutes. Switching would not take long for simple programmes, but it is most uneconomical and wrong to use COLOROB for tasks which could be performed by a super desk-aid. It has been designed to cope with the more complex crypt problems, the programmes for which might remain on the machine for some time. For example, FOGLE, a programme combining [redacted] and GLEESON methods which would take about six minutes to run on COLOROB about six months by hand and desk-aids would be left plugged up for some time to treat all suitable incoming messages. Setting up such a complex programme might involve plugging some 1,000 to 1,500 different wires and this, in itself, is quite a job and the possibility of mistakes and consequent delay cannot be overlooked.

It is anticipated that, at GCHQ, the programme for which COLOROB has been more particularly developed will remain on the machine for several days and, on occasions, for even several weeks - and so the time required to change from one to another is not of great importance as there are other machines available for doing the standard tasks which are always cropping up. At DSB, however, where there will be only one machine, it is for these tasks that COLOROB will be mainly used and it would be a pity if switching time prevented a big programme being interrupted to run a short but important one or if it took several hours to prepare the machine every time it was wanted for a very popular programme which runs for only a few minutes. Such disadvantages would add greatly to the expense of COLOROB not only in shortening the productive running time but also in not encouraging customers to experiment and make full use of the machine's versatility. Of course it can be argued that even if it does take several hours, a result is obtained which could not be produced otherwise; but it can also be argued that many more such results could be obtained if switching time were reduced to a minimum.

This switching time could be reduced if a plugboard were added to the machine because changing from one programme to another would then take but a few minutes. A plugboard is an additional facility which may or may not be used. As already stated, it would greatly simplify and accelerate the changing of programmes but it would not preclude the setting up of other jobs by direct plugging.

Serious consideration is being given to producing, as economically as possible, a Hollerith type plugboard for this purpose. Some research will be necessary to find out whether it will work and, if it does, a considerable development period will follow. The additional cost of a plugboard cannot, as yet, be assessed and will depend on the design and the complications of adding it and on the number of boards and wires required. It is the type of thing envisaged by Dr. Morgan and mentioned in para 45 of his paper "High Speed Machinery for DSB"; I cannot quote as I haven't a copy but the gist was that a much superior machine could be had for a small additional expenditure, say £5,000. The time will soon come when DSB will be asked and will have to say whether they want this additional facility.

In my opinion, a plugboard is necessary and the additional advantages and flexibility of COLOROB would be well worth any reasonable delay in delivery date or increase in cost. I am inclined to think that members of MH would agree with me, but I realize that there may be many financial and policy matters which would force you to veto it.

Yours Sincerely
Larry Conway

R.N.Thompson Esq.,
DSB., Melbourne

TOP SECRET