

MT

C/-Government Communications Headquarters,
Oakley,

Priors Road,
Cheltenham, Glos.

12th August 1955

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information removed.

ACE-3

~~TOP SECRET EIDER~~

Dear Mr. Thompson,

Since arriving in X Division I've been able to collect a few facts and ideas about COLOROB which may help you to decide where the machine is to be set up. I hope this is the type of thing you meant when you asked me to send a report, and that it is not all too obvious.

I should be glad to answer, or to find out the answers to, any questions you may have but feel that Robinson and Watson will be able to answer most of them. I think a personal talk with them on their return would be most beneficial.

SPACE

A copy of the provisional plan for the GCHQ COLOROB room has already been sent to you by MLO. From this plan and from earlier information it can be seen that the first requirement is a large room some 40' x 20'. This space will be needed for the two suites of racks, the drum and the power supply units; there will be no gang-punch with the DSB machine which will have tape input and tape and/or electromatic typewriter output.

The refrigeration plant, which is an essential part of COLOROB and appears on the drawing, will require a room to itself. It is too noisy to be in the big room and, for the same reason, should not be next to anyone's office. A small annex would be ideal or, failing that, a covered pit, I am told, would be suitable and would deaden most of the noise.

The engineering maintenance staff will need a workshop close by. Space will be needed for testing-equipment and for stacking spare chassis either in this workshop or somewhere else adjacent to the machine.

The operators will be in the same room as COLOROB.

The programmer and/or machine cryptanalyst should be in a separate room but not too far away because they will be collaborating with both operators and maintenance staff.

Ancillary equipment such as tape/card and card/tape machines will probably be with MHK. However, it would be preferable to have the tape perforator near COLOROB.

In the present design, not all the chassis space is used so there is still room for some additions. However, further space should be available in case other additions, such as a dictionary, are required.

SITE

The things to be considered are:

- (A) whether COLOROB is to be in N or S Block
- (B) whether the MH Hagelin party is to be in the same block as COLOROB or not.

Concerning (A), the following arguments have been put forward:-

For N Block

- (i) There is more space
- (ii) COLOROB would be nearer the customers and the great advantage of its speed would not be dissipated by customers wasting time in walking to and from S Block with instructions and results.
- (iii) COLOROB's staff would be more readily available for answering the questions of MH.
- (iv) The absence of a secure telephone line between S and N Blocks would not matter.

(ii) and (iii) alone would educate and encourage people to make full use of the machine.

~~TOP SECRET EIDER~~

what size? Robinson should know

R. 31/8

MH - Melain

(I have a cap.)

~~TOP SECRET~~ EIDER

Against N Block

If COLOROB is to be the nucleus of an X group, then, from an X point of view, it should be with the rest of the machinery to facilitate both maintenance and administration.

With regard to (B) above:-

For having the Hagelin party with COLOROB

- (i) The Hagelin party in GCHQ believes that since moving from Eastcote to Cheltenham, their production has increased although their staff has decreased. They attribute this improvement to having the machine in the next room - where they are able to study results as they are produced and adjust programmes accordingly - instead of a quarter of a mile away.
- (ii) Not only can problems be dealt with more speedily but machine time can be saved for other tasks.

These two arguments are strong when applied to the older and slower RAM machines used here by the Hagelin Section, because constant supervision and direction by cryptanalysts can eliminate a great deal of unnecessary work, as has been shown frequently both during the war and since, but are less strong when applied to COLOROB. With COLOROB, which is so much faster, even complex programmes take only a few minutes to run and it is not worthwhile interrupting them to study intermediate results especially when, without a plugboard, it takes such a relatively long time to set up a new programme. Nevertheless there is still time to be saved by getting results quickly and deciding what programme is to be run next.

Against having the Hagelin party with COLOROB

Some members of X believe that the Hagelin party, because of its proximity, gets more machine time than it really should and consequently, although it may benefit from its proximity, other branches of H suffer. Even if the allocation of machine time is unbalanced in this way at GCHQ, and I doubt it, it is unlikely to be in a small centre like DSB.

Also it is of great importance to have the tape making equipment near COLOROB. Here at GCHQ it is considered to be too far away although it is only 100 yards distant and within the same compound.

I am sorry I can't be more helpful by presenting a strong one-sided argument but there doesn't seem to be one. However, it appears that personalities and co-operation are much more important factors than the actual position of the machine.

Personally, as a member of MH, I should like COLOROB in N Block with ROMULUS and the tape making equipment there too, and believe this would be the most satisfactory and economical arrangement. Failing this, COLOROB ROMULUS and the tape making equipment and the Hagelin party should be together in S Block. The four must be together to obtain the best results.

How much tape-making equipment do we need?
P.R. STAFF

Maintenance Staff

X, I believe, has already written about the type of engineers required.

It seems that the engineers will be kept busy by the machine and, although available for consultation, will have little time for anything else. COLOROB will require constant attention. The more I see of the various difficulties and delays experienced here on the other machines, the more I realize the importance of having a skilled maintenance team to get the maximum benefit from the machine, indeed, even to get it working. This is no reflection whatsoever on GCHQ and merely stresses well known but unfortunate characteristics of this type of equipment.

Operators

The main qualifications needed seem to be common sense, though in recruiting notice is taken of their aptitude for maths.

~~TOP SECRET~~ EIDER

Programmer

Initially I think I'll be able to cope with both the Machine Cryptanalyst's and Programmer's jobs. It is too early yet to say how soon another programmer should be trained, but eventually one will have to be.

PERSONAL VISITS

A few weeks ago I went down to London with Trevor Robinson to see the Elliotts and Ferranti exhibitions at the British Instrument Makers Show. Elliotts had an electronic computer for £25,000 and Ferranti one for £35,000. Both machines are slower and less versatile than COLOROB. Robinson was most helpful in pointing out the merits of these machines and in making comparisons with COLOROB.

I consider the trip was worthwhile and hope I caused no administrative difficulties by getting a Cheltenham/London rail warrant from Australia House. With your permission, I should like to make two or three trips a year to such exhibitions as they are most instructive.

Yours Sincerely
A. G. Eastway

*An answering -
saying no difficulty*

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

The operator will be in the same room as COLOROB.
The programmer and/or machine operator should be in a separate room
The present arrangement of the machine will be used so there is still
additional space available in case other
equipment such as tape and card/tape machines will
be added in the future. However, it would be desirable to have the tape perforator
in a separate room.

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The matters to be considered are:
(i) whether COLOROB is to be in N or S Block
(ii) whether the M1 machine party is to be in the same block as COLOROB or not.

According to (A), the following arguments have been put forward:-
For N Block

- (i) in more space
(ii) COLOROB's staff would be more readily available for answering the questions of M1.
(iii) The absence of a secure telephone line between S and N blocks would not matter.
(iv) and (iii) sides would educate and encourage people to make full use of the machine.

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