

DSB

File 8/10/31

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TLO/ETR/037

10 February 1958

The Director,
Government Communications Headquarters,
Oakley,
Cheltenham, GLOS.,
ENGLAND. (For Head of M Division, attention M.23)

Dear Alan,

INFUSE

I am sorry that I have not been keeping you better informed on the progress of the installation but in the main this is due to the fact that we have not run into any serious difficulties so far and we have been pressing on as quickly as possible to take advantage of the unusually cool weather we have been having this summer. Today has been quite hot (about 93° in the machine room so we have not had it switched on for the first day in several weeks.

So far we have had everything working as individual units although we have not tested every chassis. After running some test programs using logical units, counters etc. we got the output going on the H/S punch and the S/H punch. We had very little trouble with this although we found that on both units we had to increase the coupling capacitor between V109b and V204 (on Chassis 30) from .02 to .03 uF. A typewriter has recently been attached and is now working after a bit of fiddling. The tape to drum equipment also worked without any trouble although it took a little longer because the Reader required adjustment and we did not realise that the handbook was packed with the unit which we regarded as the spare. We have tried both drum units but they are not fully tested yet: the first one (with the scratch) does not sync as well as the other and there is a great difference in the run-up time between the two of them. I am sending you a signal about this which you will have received before this letter. At present we are preparing to test tape to drum writing and I don't expect we will have much trouble with this as we have checked a number of reading and writing chassis and have had no trouble carrying out these operations on the drum.

We have been agreeably surprised at the reliability of the units in view of the fact that we have been operating them for long periods in a fairly warm room without air-conditioning. Our experience so far has been that most chassis have a few faults when first tested due to faulty valves, shipping damage etc., and when these are corrected the chassis remain very trouble-free. I wonder whether some of the troubles experienced with the triggers may have been due to strobe pulses being too short: we modified the strobe-pulse generators when we first got the clock going as I felt they were too short before we received your letter. Perhaps Barry or Chester will remember that the strobes were increased from 1/3 usec to 1/2 usec as the former figure was too short for reliable triggering. We have also removed the modifications to the inputs of the shift registers.

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Thank you for your letter M/4914/112/1 of 6 December. We will make the modification you suggest to the regenerative triggers. I have not yet had time to have a good look at the other triggers and their good performance so far does not justify taking time off to do it at this stage: of the clears you suggest one of the first two (smaller cross-over capacitors or clamping the anodes) seems preferable. From Barry's letter of 7 January I see that the first has been tried. I will certainly look into this but I will leave it until we have trouble or until the machine is at the stage where programs are being run. Thank you for your suggestions on the clock 200 volt supply and for Barry's follow-up suggestions in his letter. Providing a separate supply presents a lot of problems for us (room, money and somebody to do it) but I think we will manage to get it done: I have in mind asking STC whether they can provide units of smaller capacity than Westat 12 amp units and if so we can mount them in the two spare positions of the Power racks.

I think I ought to mention at this stage that No.1 Drum (the one with the scratch) had partially broken loose from its mountings in the crate. The base was a bit bent but there was no damage to any of the heads. This drum has a run-up time of about 5 minutes and the other takes 22 minutes.

We have a query on the typewriter. Two Letchworth machines were received but I understood these were not intended for INFUSE. (At present we have the spare for ROMULUS attached). If you are not sending us one I would be grateful for your suggestions: a Letchworth would seem the most convenient. Would you please give details of cost etc. so that the usual arrangements can be made. *Could you please signal us about this?*

The CICU equipment for tape preparation arrived from NSA about a fortnight ago. They have also sent us a Type 908 IBM plugboard and cradle in lieu of drawings of same for which I asked which was very good of them. One of the SO's at Salisbury is making measurements on cross-talk in the plugboards: we don't, of course, expect that this is going to alter our ideas on what will be done, but as there is a good deal of money involved we feel that we should be quite sure about it before we start.

Generally speaking we are feeling very pleased with progress so far, but I realize that the hardest part is yet to come. I would like to thank you very much for the constant flow of drawings and other information which has, of course, made things much easier at this end.

W. K. R.

(E. F. Robinson).

for: HEAD OF TELECOMMUNICATIONS GROUP, W.R.E.