

EXT. 2311

Room No. E/0607

YOUR REFERENCE 8/10/41

OUR REFERENCE M/7523/112/1

(Please quote in reply)



OAKLEY,

PRIORS ROAD

CHELTENHAM, GLOS.

9th February, 1959

Director,
D.S.B.,
MELBOURNE.
Attention D.S. (Mr E. T. Robinson)

Declassified by ASD - 2024
National security and/or personal
information removed.

Dear Trevor

I have been rather tardy in replying to your 8/10/41 of 14th November, 1958, and I shall answer your comments paragraph by paragraph. Chester Kingsley has provided much of this reply.

2. Page 1 para (3): we have experienced no difficulty on Colorob when the bounce was limited to 10 to 15 volts. We would suggest that you try adjusting the westats for better regulation, in accordance with the instruction booklets already supplied.
3. Page 2 para (3): we have not considered any form of marginal checking facilities. The variation of the +150 volts line would only in a small way simulate falling emission and I think would be an inconclusive test. The variation of the -200 volt line would only test the D.C. conditions of the trigger, conditions which have given us very little trouble, and the A.C. conditions would remain untested.
4. Page 2 Tape to drum para (c): at one time we thought we had interaction between stages, but proved this to be general instability of the triggers. This was completely eliminated by the modifications previously suggested to you i.e. +2, 100 ohm cathode follower anode stoppers and 18K cathode follower loads.
5. Page 3 Tape to drum para (d): we agree fully with your recent study on fluctuations of the lamp voltage. We did try operating the lamp from the 12 volt battery but proved that this was unnecessary. However, the Tape Reader is extremely sensitive to tape shudder as it passes over the photocells. To assist in holding the tape firm we have fitted a further guide plate and clamp to the end of the Tape Reader.
6. Tape to drum: further to M/7119/112/1 of 11th June, 1958, para. 3., we have now fitted a further modification to the input circuits of Chassis 09. On drawing B51683 the input to V20b i.e. the Reader sprocket pulse is now taken to the new valve grid through a 47K resistor, with a 0.005µF capacitor to Earth and a 47K grid stopper. The cathode of V205b has been taken directly to -50 volts, although we think that -30 volts may be more the correct figure. This modification assists the correct reading of characters after stopping by making the delay control much less critical, since some delay has already taken place.
7. Page 3 Drum & Associated circuits para 3: the Ferranti circuit for the drum servo is not suitable for COLOROB/INFUSE, because the Ferranti circuit operates on a word synchronisation principle whereas COLOROB/INFUSE uses a digit synchronisation principle.
8. Page 3 Drum & Associated circuits para 4: we would like to know if cooling the preamplifiers has any effect on their reliability.
9. Page 3 Drum & Associated circuits para 5: Ferranti still maintain that no lubrication is necessary. I understand that on the original magnetic drums grease nipples were provided to lubricate the bearings but that more damage was done by inserting dirty grease than by lack of lubrication that they now life pack the bearings with grease. This grease is supposed to outlast the useful life of the bearings.

However, since Ferranti have not committed themselves in writing, I have now written to them on this subject. I enclose a copy of my letter and will send you a copy of their reply.

10. Page 3 Logical units : we consider that the +2 modification is essential for satisfactory working and would recommend that time be made available for this at the earliest opportunity. We had a recent case on COLOROB when a program which had been working satisfactorily failed completely when the +2 volts dropped to less than +1 volts due to its charger failing.

11. Page 4 Counters and Shift Registers : again we would stress that if the +2 modification has not been done on these chassis, you may get the unreliability you mention. Additionally, even if these registers have already been modified to +2, the complementary inputs received from the logical circuits will be noisy and cause instability.

12. Page 4 Output : we await your final report with interest.

13. Page 4 Modular Adders : we agree that your solution is not elegant but it could also be used on the Accumulators and Accumulator Extension counters if the modification detailed in our letter M/5104/112/1 of 18th September, 1958, is not satisfactory. We have had no further trouble.

14. Page 5 +2 volt Bias supply : we would expect a final current drain of 8 Amps., when all the chassis are modified. We, also, have fitted a separate charging unit but continue to use the same battery.

15. Page 5 Labelling : thank you for your samples of the self adhesive label, which we found very interesting.

16. Page 5 Clock : we have not experienced this trouble here. I would have thought that the only modification required is a change in the voltage level to which the input register on the Schmitt trigger is returned i.e. alter the +50, -50 volts on the variable resistor.

17. Page 5 Coaxial cables : after the initial faulty cords during the installation we have had practically no trouble, except operationally when a cord is pulled out by its cable and not its socket.

18. Page 6 Plugboards : I shall write to you separately about this subject.

19. Page 7 para 3: Frank Withers and Chester Kingsley have written to you separately regarding the magnetic core store, references M/5288/112/1 and M/5293/112/1.

20. Page 7 para 4 : Chester has written to you separately regarding the reports - M/5369/112/1.

21. I was surprised to learn that you are returning to Salisbury, and would like to ask you to ensure that the liaison established between COLOROB and INFUSE continues on the engineering side, and does not die with your departure.

22. I am conscious that this reply gives no indication of what we have been doing on COLOROB, and to that end I will write you again shortly without holding up this letter further.

Yours sincerely,
Alan Bruce

8. Page 3 Drum & Associated circuits para 4 : we would like to know if cooling the preamplifier has any effect on their reliability.

9. Page 3 Drum & Associated circuits para 5 : Ferranti still maintain that no lubrication is necessary. I understand that on the original magnetic drums grease nipples were provided to lubricate the bearings but that more damage was done by inserting dirty grease than by lack of lubrication that they now life back the bearings with grease. This grease is supposed to outlast the useful life of the bearings.

However, since Ferranti have not committed themselves in writing, I have now written to them on this subject. I enclose a copy of my letter and will send you a copy of their reply.