DPS-3917

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21 August 1958

To: WRSP-2)
WRSP-3) Att: Commo

From: R-W, [redacted] 25X1A

Info: Headquarters

Subject: Engineering Memo re: Modified System 1 Information Amplifier (MP 70641)

Both detachments have noted that the amplifier gain could be increased by changing the physical location of wires and parts. The gain variations were erroneously attributed to changes in degenerative coupling between input and output.

The true cause of the gain variations was found to be caused by the changes in stray capacitance to ground. A favorable lead and parts layout would reduce the stray capacitance, increase video band width and, therefore, increase the amplifier gain for pulse input signals.

An additional modification to the amplifier should be made, and a permanent note should be added to the amplifier schematic.

MODIFICATION: Remove capacitor C926 and discard.

This capacitor is paralleled across the plate resistor of the first stage in the amplifier. This capacitor is not required and it reduces the video band width. With this capacitor removed, the high-frequency response should conform to the curve shown in the System 1 Field Service Bulletin No. 2.

Answers to Questions from WRSP-3

1. The tolerance on the short return interval of the System 3 third local oscillator (nominally 1.5 milliseconds) is 1.2 milliseconds to 2.0 milliseconds.

2. The bias adjustments for the data reduction equipment as described in the instruction manuals are correct.

3. WRSP-3 has noticed that occasionally the voice readout tape does not make a voice announcement on the first count on the second or third loading during a complete duplicating process. Stated in another manner, for a normal mission it requires three reels of 1-mil tape to duplicate or copy the information contained on one reel of 1/2-mil tape. The VRO tape always makes the first-minute voice announcement for the first of the three duplicate reels, but occasionally there is no first-minute announcement on the second and/or third reel.

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To be certain of the cause, the equipment would have to be checked while it was malfunctioning. The factory has one suggestion, as follows:

> When the transports are switched to automatic operation, there is a one-minute time-delay relay wired in series with the automatic transport sequence control functions. After the first reel is completed, the voice readout transport reverses. The time-delay relay will not permit a voice announcement to be recorded for the first 60 seconds after reversal. The time delay has no correlation with the "start light."
>
> Perhaps the time delay relay prevents the first-minute voice announcement on the second and third reel. Try allowing more time before starting the second and third dupe.

4. Although the factory does not have the distribution schedule for data reduction equipment, it is our understanding that Detachment C will not receive H and K racks.

25X1A

[redacted]

PWA:hcp