STANDARD FORM NO. 64

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Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files

DATE: 31 March 1961

25X1

FROM : [redacted]

ILLEGIB

SUBJECT: Trip Report - Contract RD-161, Task Order 1 [redacted] - CR-17 Collection Receiver [redacted]

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1. The CR-17 is a [redacted] collection receiver covering the frequency range [redacted] On 29 March 1961 the undersigned visited [redacted] to discuss operating characteristics of the subject equipment. Participating personnel were:

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[redacted]

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2. During the R+D Laboratory's evaluation of CR-17 prototype equipment, channel 1 (of one of the receivers) became inoperative. Except for this malfunction, the equipment operated uniformly throughout the tests; however, it was noted that although the specifications called for reception of signal intensities up to -20 dbm, the receiver would saturate at well below this level, with subsequent increases in input power resulting in reduced output level. This effect was so pronounced that when a -20 dbm signal input level was injected into the receiver, the output level was effectively blanked.

3. [redacted] project engineer on the CR-17 program, demonstrated that when a model 80 signal generator was used input levels up to 0 dbm would not cause blanking. He then connected the output of a pulsed Hewlett-Packard Model 608 to the input of the CR-17 and demonstrated that blanking does indeed occur when this particular generator is used as the input source. His explanation was that the circuitry design of the Model 608 is such that the CW is never completely cut off by an external pulser. This CW leakage is rectified and at high input levels constitutes the major part of the total DC energy being put into the CR-17 receiver. When viewed on a scope, the pulse level appears to be decreasing with increased input; actually, the base line of the output is moving gradually to the peak of the pulses. This is not readily apparent to the observer because of the AC coupling which is used in the receiver. At any rate, the CR-17 apparently does have a capability for accepting input signals with intensities up to 0° dbm, although ~~hard~~ hard limiting will be present.

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4. [redacted] 25X1 **who built the helical resonator bandpass filters for the CR-17, checked out the inoperative channel of the receiver and found the problem to be due to an extremely high insertion loss in the band one filter. Upon taking the receiver apart, the cause of the high insertion loss was obvious. One of the tuning capacitors had been readjusted sometime after leaving the contractor's plant. The plates of this capacitor were actually touching and shorting out the filter. Readjustment of the filter was readily accomplished and we were back in business again with all four channels.**

5. **The sensitivity at low temperatures reported in the A+A evaluation is less than would be desired; however, the receiver now seems to meet all specifications in the most important areas of consideration, and the units will be turned over to the customer for operational employment.**

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