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Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files

DATE: 18 March 1957

FROM :

[Redacted]

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SUBJECT: (Contract RD-122 Task 1 - AS-3 - Trip Report

[Redacted]

ILLEGIB

1. General - A visit was made to [Redacted] on 11 March 1957, to monitor the development of the AS-3 Semi-automatic [Redacted] System. Present for a discussion of development activity were:

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[Redacted]

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2. Background - In an earlier phone conversation with [Redacted] the project engineer, it was determined that improvements sought in the contractors Bi-monthly Progress Reports were not being incorporated in the report then being prepared. This matter was discussed with [Redacted] in an earlier visit and was also the subject of a memorandum to the Contracting Officer when improvement was not noted in a subsequent report. The contractor was authorized to delay submitting the report being prepared pending a conference with senior engineering representation. [Redacted] responsible for writing the report is a mechanical engineer).

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3. Progress Reporting - Progress report requirements were reviewed and [Redacted] acknowledged that the present manner of reporting did not meet the contractual requirement. By way of explanation he said that the company was concentrating on getting the work out rather than spending a week on the report. [Redacted] was reminded that the company has expended 50% of the development time for the first deliverable prototype (16 months) but that the expenditure of engineering time in terms of dollars was only 12% by the company's own reports to the Contracting Officer. It is felt that the very good engineering team of [Redacted] were influenced by their work at [Redacted] on an XG type contract where progress reports were not required but that it is now well understood what type of report is required under their present RD type contract. [Redacted] said he would have a satisfactory report in the mail by the middle of March.

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RADIATION

4. Transmitter - As suggested in a previous visit the contractor measured the transmitter radiated output under key-up conditions and found excessive (continuously running oscillator, the absence of a buffer, oscillator/tank coupling through power amplifier tube capacity). The transmitter is now designed for oscillator cathode keying (50 volts at 25 ma) and radiation under key-up conditions is now corrected. The contractor reaffirmed that power output varies between 25 and 30 watts into loads of 70 to 1200 ohms over the entire frequency range. Work at the present time concerns the tone keying circuitry for recognition.

*No + much
reserve*

5. Tape Cartridge - A functional model of the keyer-coder tape cartridge has been fabricated. This unit consists of two spring loaded tape spools, gear mechanism, and recorder heads. In coder operation placing data on the tape winds the spool spring. In removing the cartridge from the coder the spring motor returns the tape start for correct indexing. In keyer operation removal and reinsertion of the cartridge automatically indexes the tape for second or additional transmissions. The cartridge is motor driven in the keyer for transmitting.

6. Keyer - The mechanical design is almost complete. The electrical design will be transistorized upon completion, by [redacted] - Some basic data on tests of the flux density, impedance and signal threshold was said to be necessary before this work could commence.

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7. Coder - Mechanical design nearing completion - present work involves some refinements.

8. Power Supply and System Packaging - This problem was discussed in considerable detail. The undersigned stressed the need for extensive study of human engineering pointing out that packaging techniques cannot be optimized until positive data on the GFE components are determined. (The particular receiver to be incorporated - firm data on the TP-3 design etc.) - The undersigned described the [redacted]

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[redacted] said they were studying transformer and choke size versus operating duty cycle and 1% ripple. (The 1% ripple was indicated as necessary for transistorized circuitry).

9. Summary - Both [redacted] to a lesser degree are active in the AS-3 development as representative of senior engineering supervision. Progress remains slow but decisive. Packaging is excellent. The next two months should complete the keyer and coder design to a point where electrical tests can be undertaken, and the January/February Progress Report should contain transmitter test data.

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