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The Files - RD-122, T.O. 1

17 April 1959

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Trip Report - AS-3

25X1A5a1 1. On 10 April 1959 a visit was made to the [REDACTED] New Jersey, to monitor the progress of Contract RD-122, Task Order 1, development of Automatic Agent Set, AS-3. Participating in discussions concerning this program were:

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2. The contractor was told of the equipment difficulties which had been encountered during the preliminary AS-3 field tests, held 15 to 27 March 1959. Principal among these was coder unreliability, evidenced by erratic spacing between dots and dashes. The contractor was told that the two electrical defects which arose during the tests, together with the coder faults, must be remedied in the remaining eight prototypes. On one unit (Serial 514) RF was leaking back into the keying amplifier and causing improper operation, and in the other (Serial 515) the RF-output inductor was intermittent.

25X1A5a1 3. [REDACTED] said the coder problem was probably due to inconsistent tape advance, especially when the DASH key is depressed. In one of the coders recently completed at [REDACTED], this effect had been quite pronounced, and a remedy is now being investigated. [REDACTED] was told that unless the remaining coders could be repaired to permit their use by unskilled operators, we could not consider producing the coder in quantity. He said he had already discussed with [REDACTED], another [REDACTED] mechanical engineer, the possibility of providing key overtravel so that the tape advance was not so intimately related to the speed and extent of the key downstroke.

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25X1A5a1 4. [REDACTED] has encountered, in pre-delivery checks of some of the transmitters, the same RF feedback problem noted by us in our field tests. [REDACTED] telephoned on 10 April, in fact, to say that the two AS-3 systems due that day would not be ready because this problem had arisen.) The contractor had found that the field expedient used by us (installation of an RF choke in the keying line) has eliminated the feedback, and the eight keying amplifiers being assembled at [REDACTED] are being revised to include this modification. The inductor trouble has never been encountered at [REDACTED], and was not present in the four transmitters checked by the writer. [REDACTED] was told we would watch closely for this problem in future field tests and advise him if it arose again.

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5. [redacted] were told that our tests revealed other shortcomings of the AS-3 which would have to be remedied before the equipment could be produced in quantity:

- a. It frequently takes one to two minutes to tune up the transmitter simply because rotating the μp -output inductor by means of the knurled thumbscrew is such a slow procedure. Operational units will have to have either a low power (less than 1 watt) TUNE position or, preferably, a faster method for sweeping through the inductance range, such as a sliding contact on the coil.
- b. The absence of break-in appeared to be an unnecessary limitation on more flexible operation. Minor wiring changes could be made, it appeared, which would allow the operator to hear his base station "between dashes" on manual CW, and immediately after releasing the IDY or NEG button. This change would also reduce the number of function switch positions from 3 to 2.
- c. Operational AS-3 systems must include a socket and the necessary circuitry to work with the OS-4, Agent VFO recently developed by [redacted]

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6. Additional changes are sure to arise as our operational tests continue, the contractor was told, but he was invited to start thinking about solutions to the above problems, since it was likely they would have to be solved prior to production. [redacted] said that [redacted] would want to make several layout changes prior to production, in order to simplify assembly and make the components of the transmitter more readily accessible. The present design is not reproducible, except at high cost and in limited quantity, he said. When pressed for an estimate of redesign time, he said that it would take about 6 months to come up with a final layout and build one or two systems, but that production in lots of 20 or so per month could begin about 90 days later. This estimate compares with the figure of 10 months for delivery of production AS-3 "as is" given by [redacted] on 13 March. The writer was unable to see [redacted] on 10 April since he was busy all day on a rush report for [redacted]

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7. Two additional AS-3 systems, less AC supplies, were delivered to the writer, who observed their final check-out tests. Six extra cartridges were delivered and [redacted] was told that at least one would be sent to [redacted] for their use with the magnetic CK-8 Coder/Keyer.

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- Distributions:
- R&D Subject File
 - OC-0
 - R&D Lab
 - Monthly Report
 - OC-T/CT-OR
 - EP Chrono

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