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Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files

DATE: 5 April 1957

FROM :

[Redacted]

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SUBJECT: Project RD-128, Quick Reaction Facility

1. This report covers progress to date on the individual Work Orders issued under Task Order #1, RD-128, with [Redacted]

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a. Work Order 1 - This work order was issued on 19 December 1956 for the design and fabrication of one (1) 600 mc stacked Yagi antenna array at a cost of \$3,896.44. On 12 February 1957, change order No. 1 was issued calling for the design and construction of a 300 mc antenna section to be added to the original antenna and constructed in accordance with the physical requirements established, for the 600 mc antenna. On 20 March 1957, the contractor was requested to submit a cost proposal on the construction of an aluminum packing case for the disassembled antennas. On 1 April 1957, the contractor delivered to the writer one dual frequency antenna as called for in the work order plus one copy of test data and manufacturing drawings. The workmanship was of good quality and delivery was made within four days of the estimated completion date. The total cost of Work Order No. 1 and Change Order No. 1 was estimated at \$5,890.75.

b. Work Order 2 - One of the ferrite antennas built by [Redacted] under another project was sent to [Redacted] under this Work Order for impedance measurements over the band of 100 kc to 30 kmc. This measurement was considered to be preliminary to additional test and evaluation of the ferrite material as a possible replacement for antennas of much larger dimension presently in use. The test data was forwarded to SPD on 20 February 1957. Delivery was made to the Agency approximately two weeks later than the contractor's estimated delivery date. The cost of Work Order No. 2 was estimated at \$953.93.

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c. Work Order 3 - This Work Order was for the design and construction of one 7 mc to 14 mc filter and was issued on 19 November 1956 with an estimated completion date of 19 December 1956. The filter and accompanying test data were delivered to the Agency on 4 January 1957 and was immediately forwarded to the SP Division. The estimated cost was \$1,581.00.

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d. Work Order 4 - This Work Order was for the design and fabrication of 25 video recording equipments, designated VR-4 (rebuilt minifon) for which breadboard models were supplied by the SP Division. The Work Order was issued on 17 January 1957 with a requested completion of the engineering by 1 April 1957, with the balance of 24 recorders scheduled for delivery ~~of by~~ 1 May 1957. The SP Division requested that the quantity of 25 recorders be increased to 35 and a Change Order was issued on 15 February providing for the rebuilding of these ten additional units. On 4 March 1957, the contractor was asked to build three prototypes by 1 April 1957 and on 15 March the contractor requested 100 hours of overtime in order to meet this new requirement. The contractor was visited on 1 April 1957, he advised that due to certain manufacturing difficulties the three engineering models would not be completed until 8 April 1957. The combined cost of Work Order No. 4 and Change Order No. 1 is estimated at \$48,070.03. The ten additional minifon wire recorders will be supplied the contractor for modification as they become available during the next three months. Progress on this task has been satisfactory, the transistorized video amplifier designed by the Agency has been built, potted, and tested and found to be well within the specified sensitivity range. The company project engineer has designed a video amplifier circuit which would have comparable characteristics with much less power drain than the original amplifier. He advised that he would build a breadboard model of this new amplifier and submit it for our test and evaluation.

e. Work Order 5 - Prototype interference generators (Test Buzzer) have been delivered to the Agency and upon preliminary evaluation have been found satisfactory. The Work Order issued on 27 December 1956 calls for the manufacture of 50 units with a requested completion date of 27 March 1957. The balance of 47 units are now expected to be completed during the week of 8 April 1957. The cost of Work Order No. 5 was originally supplied the writer as \$5,215.46. As work progressed, it was learned that the cost quoted by the company project engineer was for the first phase of the development and that production of the 50 units would require an additional \$2,726.62 making the final cost \$7,942.08. This redesign of the Signal Corps SG-23/U interference generator accomplished the design goals set forth on the original Work Order. The audible sound level was reduced and the directional RF radiation characteristics of the sample unit were minimized. The cost for this work, however, appears excessive.

f. Work Order 6 - This Work Order is for the compilation of antenna data covering antennas previously developed at which could be produced in small production quantities for the Agency. The various types of antennas are separated into categories

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such as slots, horns, spirals, etc. The purpose was to supply the SP Division with a catalogue of antennas, including test data, which could be readily manufactured by [redacted] Work Order No. 6 was issued on 5 February 1957 and the estimated completion date was 15 March 1957. Section 1, Biconical Antennas, Section 2, Horn antennas, and Section 3, Spiral Antennas, were delivered on 3 March 1957. Change Order No. 1 was issued on 7 March 1957 and provided for an overrun of \$1,402.05, making the total cost \$5,801.68. When completed, this catalogue will provide photographs or drawings, tests data and descriptions of approximately 200 different antennas developed by [redacted]

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g. Work Order 7 - This Work Order calls for the measurement of the 2 to 5 kmc and 5 to 10 kms modified discone antennas and experimentation with these antennas mounted in parabolic reflectors. This Work Order was issued on 5 February 1957 and was requested to be completed by 1 April 1957, the cost was estimated at \$6,369.97. This work was only 20% completed on 1 April 1957, the contractor explained that the antenna ranges were occupied with antenna tests being made under Work Order No. 8 and has requested an extension of 1 month which was granted.

h. Work Order 8 - This Work Order is for the measurement of antennas previously built for the Agency. The issue date was 6 February 1957 and measurements on the 12 different antennas was estimated to be completed by 1 May 1957 at a cost of \$8,346.51. Three additional antennas were supplied the contractor on 1 March 1957 and measurements were to be conducted under Change Order No. 1 of Work Order No. 8 issued 6 March 1957. The contractor was asked to supply the test data for the various antennas as it became available. Preliminary data has been received on most of these antennas. All data received is being forwarded to the SP Division.

i. Work Order 9 - This work order calls for comparison tests of the ferrite antenna measured under Work Order No. 2 with two different aircraft stub antennas supplied by the SP Division. This work order is in the pre-assignment stage for determination of the approximate cost of the work involved.

j. Work Order 10 - For development and fabrication of a UHF convertor for use with the 600 mc and 300 mc antennas built under Work Order No. 1. Shortly after receiving the request for this converter, several companies were contacted for cost and delivery proposals. In each case the delivery was not satisfactory. Approximately 15 February 1957, the SP project engineer advised that he would rework a television convertor to meet the immediate need and that the Engineering Division might change their approach to a more lengthy development program. The present estimate for completion under the QRF is 4 to 6 months at a cost of approximately \$15,000.00.

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2. After five months of QRF operation it is evident that certain aspects of the arrangement with [redacted] are not satisfactory. The contractor has complained that the widely fluxuating work load has presented a difficult personnel problem, and that the necessity of keeping separate cost accounts on each Work Order has created excessive internal paper work. As evidenced by the work outlined under Paragraph 1, delivery is usually late and costs appear quite high. It is the writer's opinion that the overall effectiveness and value of this contract with [redacted] can be more accurately evaluated by the company's performance on Work Order No. 4, the first major task undertaken by the company.

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