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The Files

22 March 1962

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Visit of Ft. Monmouth Engineers

1. On 14 March 1962 Mr. Arthur Pengelley, Chief, Long Range Communications Branch, and Mr. L. J. Lindberg, Project Engineer, U. S. Army Signal Research and Development Lab, Ft. Monmouth, New Jersey, visited the OC engineering staff to discuss an Army program for the development of an "AS-3 receiving base." During the morning the visitors were taken to Station D to observe the operation of our AS-3 base receiving equipment. [redacted] staff demonstrated the manual and automatic base positions, and described the operating procedure. The visitors were told of the results of our AS-3 tests, including our recent monitoring of the Ft. Bragg field team conducting an Army evaluation of the AS-3. This visit represented the first occasion on which Army representatives saw the cartridge recorder technique used at [redacted] and the CU-10 automatic alarm unit which permits guard-channel operation. The visitors appeared impressed at the performance of the system in receiving a 300 wpm message sent from Headquarters. They asked many questions about the equipment and obviously intend to incorporate various circuit features into their development.

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2. In a conference at Alcott Hall later in the day, Mr. Pengelley described the Ft. Monmouth project for a Forward Area Base Station for communicating with Special Forces "detachments" up to 2500 miles away. The Special Warfare Center at Ft. Bragg has asked Ft. Monmouth to develop--in 15 months--a base complex with the following characteristics:

a) A command/control center (to be located in friendly territory) connected by HF RTTY (with KW-7 on-line encryption) to three forward area centers up to 1,000 miles away in different directions.

b) The forward area centers would handle the actual traffic with detachments. Each center would have three separate dual diversity R-390 receiving positions and one transmitter for detachment circuits, plus HF RTTY and crypto equipment for working the control center.

c) The forward area centers would be equipped to receive manual CW, burst CW, AM, SSB, and FSK from SF detachments behind enemy lines. At present, the only set available to SF detachments is the AN/GRC-109 (RS-1) so only the manual and burst CW modes are to be used at first.

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Ft. Bragg plans call for automatic Morse-to-Baudot conversion at the forward area center and on-line relay with superencipherment back to the control center, but the Ft. Monmouth engineers feel that this may be expecting too much from the system.

3. A specification for the above system has been prepared and will be issued by the Army Signal Supply Agency to 7 or 8 companies on 1 April 1962. The Army expects that a contract will be awarded to the successful bidder by 1 May 1962. Funding is estimated at $800,000 and about $400,000 in government furnished equipment will be provided to the contractor.

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4. After extensive discussion and their observation of our equipment at [redacted] the Ft. Monmouth representatives said they were inclined to change their views on:

a) The System Recorder - The only recorder they had considered previously was the ET-7, but they said they were interested in the cartridge approach as typified in the SpotMaster. They were told that several manufacturers, including Collins, Gates, RCA and Sierra built broadcast quality cartridge recorders along the lines of the SpotMaster.

b) Dual Diversity - Although the Ft. Bragg requirement calls for dual diversity reception, Mr. Pengalley said he was inclined to sacrifice this feature in order to permit the playback operator to hear the actual signal and noise instead of listening to a regenerated tone from a diversity combiner. At our suggestion he said he would try binaural recording and playback from the output of two diversity receivers to try to achieve in our manual system some of the advantages that dual diversity offers to automatic receiving systems.

c) Morse-To-Baudot converters - Mr. Pengalley was cautioned that the Trak morse-to-teletype converter which he plans to incorporate into his system might not yet be developed, based upon our recent discussions with Trak. He agreed to investigate this more closely before insisting on automatic morse-to-teletype conversion in his base station.

5. Our immediate plans for additional development work were described to the Army. They were told our most needed improvement in the AS-3 receiving system was a cartridge that could be rewound and a playback unit which had several forward speeds, including fast forward. Another major

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requirement is a strip receiver capable of being changed rapidly to new operating frequencies. They were told that a survey of available receivers was now in process and that we would probably develop our own receiver if no suitable one is found on the market. Mr. Pengelley agreed to keep us posted on the progress of his project and thanked us for the information we had given him. He was asked not to discuss CIA's association with this class of operation or equipment, nor our operating procedures, but was told he could incorporate any of our circuit or equipment techniques in the Army base station.

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