

Engineering
and Research
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26, October 1918

Office, Chief Signal Officer of the Army

Chief Signal Officer, American E. F.

Cipher Printing Telegraph.

1. Attention is invited to the attached report of Colonel W. K. Wilson, General Staff, approved by the Chief of Staff, which directs the Chief Signal Officer to make certain installations of the Cipher Printing Telegraph in France and England. Colonel Wilson's report, in fac-simile, is attached as Exhibit A.

2. It is thought that the various exhibits attached hereto will tell the whole story of the operation of the apparatus, its applicability to existing circuits and apparatus, and the desirability of its being brought into use as rapidly and as widely as possible.

3. It is thought that the paragraph headed "Method used in Transmitting Messages in Cipher" in Colonel Wilson's report sets forth the procedure in handling cipher messages very clearly with the possible exception of the method of recording them at the receiving end. A machine-perforator which perforates a tape instead of printing the received signals is necessary. This machine-perforator makes an exact duplicate of the tape passed through the transmitter at the other end of the line. It is impossible to print the received enciphered signals because the printer functions, such as the carriage return, line feed, etc., do not appear properly until the received tape is combined with the key-tapes on a local set.

4. Steps are being taken to secure the necessary apparatus for making the installations recommended by the Chief of Staff with the least possible delay. These installations will comprise:

a. London: 6 shelves with machine-perforators for the line operating tables and 2 spare machine-perforators for working cipher on one channel of each of 2

circuits to Paris. Six local sets.

b. Paris: 10 shelves for line operating tables and 5 spare machine-perforators for working cipher on one channel of each of 2 circuits to London, on each of 2 circuits to Tours, and on one circuit to H. A. E. F. Ten local sets.

c. Tours: 6 shelves for line operating tables and 3 spare machine-perforators for working cipher on one channel of 2 circuits to Paris and one circuit to H. A. E. F. Six local sets.

d. H. A. E. F.: 4 shelves for line operating tables and 2 spare machine-perforators for working cipher on one channel of the circuit to Paris and one channel of the circuit to Tours. Eight local sets.

5. Cipher may thus be worked over one channel of each of 2 circuits from London to Paris; over one channel of each of two circuits from Paris to Tours; over one channel from H. A. E. F. to Paris; and over one channel from H. A. E. F. to Tours.

6. Steps are also being taken to have the necessary personnel trained in the special knowledge required for the Cipher Printer operation by the time the apparatus is ready for installation.

7. The whole matter of making the overseas installations will be expedited as much as possible and the Chief Signal Officer, American Expeditionary Forces, will be kept informed of the progress of the work. It is expected that it will take at least three months to secure operators for the installation outlined.

By direction of the Acting Chief Signal Officer.

J. O. Harbors,
Lt. Col., Signal Corps.

Enclosures.