

April 29, 1936

MEMORANDUM FOR: Research & Development Division
(THRU: War Plans & Training Division)

1. Under date of March 24, 1936, I submitted a brief description and sketch pertaining to an invention covering a modification of Converter Type M-134-T-1. Those papers were processed through at the 2d meeting of the Signal Corps Patent Board on April 17, 1936, and the instructions issued to me will be followed as soon as the necessary papers have been prepared by the Patents Section.

2. Herewith I submit a brief description and sketch covering another modification of the same device, Converter Type M-134-T-1. There are two features of this second modification which distinguish it from the first modifications:

a. The 1st modification still employs a cipher-key tape, which involves problems of preparation, duplication and distribution of tapes; the 2d modification replaces the tape by a system of interacting cam wheels.

b. The 1st modification made no provision for making a printed record, although it could be hooked up with an electrical typewriter unit; the 2d modification permits of a simple solution to the problem of making a printed record, directly and without the intermediacy of a separate typewriter unit.

3. However, the 2d modification presents one very serious disadvantage, in that the resultant cipher is composed of intermixtures of letters and figures, because it must be responsive to the 32 combinations of the Baudot, five-unit code. It can therefore not be employed on any Morse circuits.

4. The security of the 2d modification is about the same as the 1st and is not nearly so high as that afforded by Converter Type M-134-T-2 or proposed Converter Type M-161.

5. I am also forwarding herewith still a third modification which is believed to eliminate the disadvantage referred to in Par. 3 above, but it does not provide for direct printing and

Approved for Release by NSA on 09-30-2013 pursuant to E.O.

necessitates the intervention of a separate typewriting unit. This, however, may not be a serious disadvantage. This system may be quite suitable as the basis of a cryptographic machine for War Department "restricted" traffic now encoded in War Department Telegraph Code.

6. It is thought that the descriptions and sketches herewith embody patentable features, and that patent application should be filed to cover them. It is possible perhaps to assimilate all the features of the two modifications in the patent application already authorized to be filed on the 1st modification, thus eliminating extra work in the Patents Section.

William F. Friedman.

Attached:
2 Descriptions,
2 Sketches.