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ROUTING and WORK SHEET

(To be used under provisions of Par. 41.6 b, Office Regulations, OCSigO, 1934)

From: Research & Development

To: War Plans & Training

Your comments and recommendations are requested.

W. C. E.,

7/1/35

W. P. & T. 7/2/35

To: SIS

Comments and recommendations requested.

Cansler

*Copy for Mr. Steadman  
File M-434-T2*OCSigO 413.55 (M-134)  
(6-25-35)

2d Ind.

FTG:K

SIGNAL CORPS LABORATORIES, FORT MONMOUTH, OCEANPORT, N. J., June 28, 1935.  
To: Chief Signal Officer, War Department, Washington, D. C.

1. The inclosure which should have accompanied basic communication is a photostatic sketch; two copies of this sketch are appended.

2. Reference paragraph 2 of 1st indorsement, the instructions previously furnished are being observed.

Wm. R. BLAIR  
Lt. Col., Signal Corps,  
Director

1 Incl. in dup.  
Photo. sketch.

OCSigO 413.44(M-134(6-25-35) 3d Ind. 10  
War Department, OCSigO, Washington, July 10, 1935. To: Director, S.C.L.,  
Fort Monmouth, N. J.

1. The cryptographic security afforded by the present model of Converter M-134 is believed to be satisfactory and no changes other than those previously agreed upon are authorized.

By Order of the Acting Chief Signal Officer:

Roger B. Colton,  
Major, Signal Corps.

Incl. w/d.

WAR DEPARTMENT  
SIGNAL CORPS LABORATORIES  
FORT MONMOUTH, NJ

FTG:K

June 25, 1935

SUBJECT: Converter M-134-T2

TO: Chief Signal Officer, War Department, Washington, D. C.

1. During the recent visit of Mr. W. F. Friedman of your office to these Laboratories, the hypothetical question was raised as to whether or not the tape could be eliminated from such a machine as the Converter M-134-T2 without sacrifice to the cryptographic security. It seems that the distribution of these tapes may not at all times be convenient. A possible means of accomplishing such a result is described herein. It is suggested that the Cipher Section, your office, study this matter and advise these Laboratories as to whether or not a further investigation is desired.

2. There are attached two photostat copies of a possible alternative construction to give the effect of an endless tape in lieu of the tape transmitter in the Converter M-134-T2. This method was developed jointly by Mr. W. F. Friedman and Mr. G. A. Graham of these Laboratories. While the proposed method has not been proved physically or cryptographically, it is believed the theory may offer sufficient promise to warrant investigation.

3. The anticipated advantages of the method are a very material simplification of the existent Converter M-134-T2, higher operational speed possibilities, and the elimination of the necessity for a distribution of tapes to pertinent stations as well as incidental tape operation troubles. It is believed that the same cryptographic security is offered as in the use of a very long tape.

4. The attached sketch is reduced to the basic electrical and mechanical features involved and does not show such features as keyboard, printer, cam contact lock (either mechanical or electrical), or wheel-step-forward release relay. However, the basic consideration is that each cipher wheel steps forward an idler cam wheel, the contacts of which control any other cipher wheel. The cams are arranged haphazardly and the cam wheels are

Le. to CSigO, 6-25-35 - Converter M-134-T2

interchangeable. Also, the circuits between cam contacts and cipher-wheel stepping magnets are interconnective manually, or subsequently they may be arranged to automatically switch, in various manners, after a given number of characters have been printed.

L. L. CLAYTON  
Capt., Signal Corps,  
Director.

OCSigO. 413.44 (M-134)6-25-35

1st Ind.

10

War Department, OCSigO, Washington, June 26, 1935. To: Director, Signal Corps Laboratories, Fort Monmouth, N.J.

1. Returned. Neither photostats nor sketch referred to above were received with basic communication.

2. Your attention is invited to previous instructions to the effect that it is desired that two service test models of this device be built, service tested, standardized and ready for procurement by the end of the F.Y. 1936.

By Order of the Chief Signal Officer:

Roger B. Colton,  
Major, Signal Corps.

(2d Ind. in following sheet)