

ROUTING and WORK SHEET

To be used under provisions of Par. 41 6 b, Office Regulations, CCSigO, 1934)

Number Each Action	From	To:	Memorandum	Initials and Date
	R&D		<p style="text-align: center;">C O P Y</p> <p>TO: MR. C. A. ROWE, Patent Section, Office of the Chief Signal Officer.</p> <p>Reference is made to memorandum of Mr. William F. Friedman, dated October 4, 1935, transmitting a draft of specifications and drawings and a request that a patent application be filed on his invention covering "Improvements in Cryptographs".</p> <p>The Patent Section is hereby directed to take the necessary action to invoke the "three year rule" under the provisions of Section 4894 R. S., in accordance with the procedure initiated by order of the Chief Signal Officer on August 21, 1935.</p> <p style="text-align: right;">(signed) Roger B. Colton</p> <p style="text-align: right;">Roger B. Colton, Lieut. Col., Signal Corps.</p> <p style="text-align: right;">W.C.E.</p>	10. 10-15-35
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WAR DEPARTMENT
OFFICE OF THE CHIEF SIGNAL OFFICER
WASHINGTON

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November 22, 1935

MEMORANDUM TO: Mr. Rowe.

1. On page 4, line 6, read "Figs. 1 - 7" instead of "Figs. 1 - 6".
2. On page 4, add after line 22: "Fig. 7 is a schematic diagram of a modification of the scheme shown in Fig. 6."
3. On page 16, add the following:

"A sixth embodiment of this invention is shown in Fig. 7. In this form of the invention use is made of single ring commutators which serve both as substitution commutators and control commutators in connection with a gang switch of 26 contacts operated by a universal bar.

"Having now particular reference to Fig. 7, the elements shown therein are similar in construction and function with the corresponding elements shown in the preceding figure. In this embodiment of the invention, gang switch 85 is so constructed that when any key is depressed, and universal bar 44 is actuated, switch levers 88, 188, 288, etc., disengage contacts 90, 190, 290, etc., respectively, and engage contacts 91, 191, 291, etc., respectively. The operation of this form of the invention is as follows: When a message is to be enciphered, commutators 1, 2, 3, 4, and 5 are aligned to a prearranged key and switch 36 is closed, setting up a circuit as follows: Battery 16 through switch 36, conductor 107, contact 90, contact lever 88, conductor 184 to contact 29 of end plate 301, through commutators 1, 2, 3, and 4 to commutator 5 which directs the current back through commutators 4, 3, 2, and 1 to contact 30a of end plate 301, through conductor 284 to contact lever 288, contact 290, conductor 106 to control magnet 13 and thence back to battery 16. When control magnet 13 is energized, commutator 1 is rotated through 1/26th of a revolution; setting up a new set of circuits through the cipher wheels. The device is now ready for enciphering the first letter of the message. If this letter is the letter A, the key corresponding to it is depressed, and the contact levers of gang-switch 85 are caused to disengage the lower set of 26 contacts and engage the upper set of 26 contacts setting up a circuit as follows: From battery 16 through conductor 23 to contact 46, contact lever 18, contact 91, contact lever 88, conductor 84 to contact 29, through and return through commutators 1 to 5 to contact 30, conductor 184, contact lever 188, contact 191, conductor 93 to contact lever 19, contact 42, conductor 121 to indicating device 14 which corresponds to the letter Q, conductor 43, switch 36 to battery 16. After the letter Q is noted, key A is released, allowing the contact levers of gang switch 85 to disengage the upper set of 26 contacts and engage the lower set of 26

contacts. At the instant when contact levers 88 and 188 both engage contacts 90 and 190 respectively, a circuit is set up as follows: Battery 16 through switch 36, conductor 107, contact 90, contact lever 88, conductor 184 to contact 29 of end plate 301, through commutators 1, 2, 3 and 4 to commutator 5 which directs the current back through commutators 4, 3, 2 and 1 to contact 30 of end plate 301, through conductor 184 to contact lever 188, contact 190, conductor 106 to control magnet 13 and thence back to battery 16. When control magnet 13 is again energized, commutator 1 is again rotated through 1/26th of a revolution and again a new set of circuits is set up in the commutator units. The device is now ready for enciphering the second letter of the message."

4. On page 13, delete the first ten lines, and last three lines beginning with "If key A". On page 14, delete the first eight lines.

5. Figure 5 is to be changed as per sample.

William F. Friedman.

Attached.