

Address reply to
CHIEF SIGNAL OFFICER OF THE ARMY,
Washington, D. C.

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER,
WASHINGTON.

Engineering-- DIVISION
and Research
haf:ho

26, November 1918.

MEMORANDUM for Lt. Col. J. O. Mauborgne:

1. In clearing up my desk towards final settlement, I find the following subjects on which you may desire information:

MECHANICAL FOUR UNIT CIPHERING DEVICE.

Briefly, the following defects have been noted in the mechanical four unit cipher device.

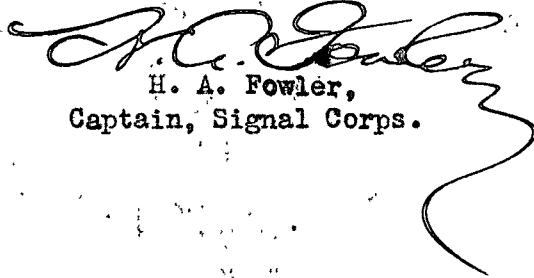
First, the shutter and shutter rods are considered too delicate and flimsy, as they get out of adjustment very easily and it is quite possible for them to cause inaccuracy in the machine without their being out of adjustment being noticeable.

Second, the tape stepping mechanism gets out of adjustment very easily, and while the adjustment is easily restored, it would seem to be too delicate.

Thirdly, additional tape guides are necessary as the tape seems to run side-wise in the guides and cause some of the pins to stay down when they really should come up through the perforation, and this of course, immediately causes inaccuracy in the cipher. Guides placed on the first machine have failed to remedy this defect entirely, so that it may be possible that there should also be an additional adjustment incorporated in the transmitters.

EMERGENCY SUPPLIES FOR CIPHER PRINTING TELEGRAPH SYSTEM

Attached will be found copy of telegram dated 21, November 1918, to Mr McMurry for a machine perforator relay and this relay will have to be included in a regular purchase request at a later date. Purchase request has not been issued for this relay due to the fact that supplies of this nature will doubtless frequently be needed on short notice, and it is thought that they should be ordered direct from the Western Electric Company, and a purchase request inaugurated at intervals to cover spare parts and supplies thus ordered. This agreement has been talked over personally with Mr Howk and is satisfactory from the manufacturer's point of view. All back material ordered to date, with the exception of this machine perforator relay, has been covered by purchase request on the Western Electric Company.


H. A. Fowler,
Captain, Signal Corps.

1 Enclosure.

DH GOVT

WASHINGTON DC NOV 21

R C MCMURRAY

CARE WESTERN ELEC CO NEWYORKCITY

PLEASE SEND TO WASHINGTON ONE RELAY USED INSIDE OF MACHINE PERFORATOR

NO NUMBER OR NAME ON SAME

CAPT H A FOWLER ROOM 2322 MUNITIONS BLDG.

FOUR UNIT CODE

| | E | T | O | A | N | I | R | S | H | D | L | U | C | M | * | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | P | N | I | R | T | O | A | L | U | C | S | H | D | * | M | E |
| T | N | P | S | H | E | L | U | O | A | M | I | R | * | D | C | T |
| O | I | S | P | D | L | E | C | T | M | A | N | * | R | H | U | O |
| A | R | H | D | P | U | C | E | M | T | O | * | N | I | S | L | A |
| N | T | E | L | U | P | S | H | I | R | * | O | A | M | C | D | N |
| I | O | L | E | C | S | P | D | N | * | R | T | M | A | U | H | I |
| R | A | U | C | E | H | D | P | * | N | I | M | T | O | L | S | R |
| S | L | O | T | M | I | N | * | P | D | H | E | C | U | A | R | S |
| H | U | A | M | T | R | * | N | D | P | S | C | E | L | O | I | H |
| D | C | M | A | O | * | R | I | H | S | P | U | L | E | T | N | D |
| L | S | I | N | * | O | T | M | E | C | U | P | D | H | R | A | L |
| U | H | R | * | N | A | M | T | C | E | L | D | P | S | I | O | U |
| C | D | * | R | I | M | A | O | U | L | E | H | S | P | N | T | C |
| M | * | D | H | S | C | U | L | A | O | T | R | I | N | P | E | M |
| * | M | C | U | L | D | H | S | R | I | N | A | O | T | E | P | * |
| P | E | T | O | A | N | I | R | S | H | D | L | U | C | M | * | P |

The type wheel has the following characters;

Normal position E T O A N I R S H D L U C M P *

Shifted " # F Y W G B V K J X Z Q . , " *

* represents the "shift signal". This shifts the type-wheel from the normal to the shifted position. After printing one shifted character the typewheel automatically returns to its normal position.

Note: In arranging a message for transmission by telegraph, any of the letters in the lower row may be used to represent the shift signal.