

Supplement # 6 M
to Bulletins 111 and 112,
October, 1926.

MORKRUM MULTIPLEX PRINTING TELEGRAPH SYSTEM

GENERAL

This supplement forms a part of specification 111 and 112, all issues to date, and covers changes in the multiplex correction circuit.

THEORY OF NEW CORRECTION CIRCUIT

In the old correction circuit, see drawing 811, the condenser discharge circuit was through the contacts of the switch relay, the windings of the corrector relay, to the midpoint of a potentiometer consisting of two 250 ohm resistances. It was found that due to the inductance of the corrector relay that the discharge of the condenser was oscillatory instead of impulsive and that in some cases the corrector relay would be properly operated by the main discharge of the condenser and then improperly operated by the small reverse discharges.

In the old correction circuit the only path for the condenser discharge was through the switch relay contacts. If the switch relay made poor contact or became biased, false operation of the corrector relay would result.

In the new correction circuit a 1000 ohm resistance is connected between the tongue of the switch relay and the windings of the corrector relay. This resistance will shunt one or the other of the windings of the corrector relay, depending against which contact the switch relay tongue is resting. Part of the condenser discharge will go through this resistance and the remainder through the winding of the corrector relay. To compensate for the diversion of some of the condenser discharge, the condenser has been increased from 1/2 m.f. to 1 m.f. so as to permit sufficient current to flow thru the corrector relay to properly operate it. The use of the larger condenser and the shunt resistance prevents the inductance of the corrector relay from causing the condenser impulses to oscillate.

The windings of the corrector relay instead of being connected to the midpoint of a potentiometer circuit is connected to positive battery through a 100 ohm resistance. The condenser will therefore, be charged with either 110 volts positive or zero, depending against which contact the line relay tongue is resting.

In case the switch relay happens to be making poor contact when the distributor contact closes, then the entire discharge of the condenser will go through the shunt and none through the corrector relay. The corrector relay in this instance will be unoperated and will remain in the position that the previous impulse set it. The poor contact of the switch relay, however, does not completely block the condenser discharge and, therefore, the corrector relay will not be improperly operated when the contact on the distributor again closes.

In actual operation with the new corrector circuit, the action of the corrector relay will be much steadier and will have greater margin for imperfect corrector or switch relay adjustments and speed variations than with the old circuit.

PARTS REQUIRED FOR MAKING CHANGE

Before making wiring changes the following parts should be on hand for each multiplex distributor table:

1 #4824	1 m.f. condenser
1 #500-80	100 ohm W.L. resistance unit
1 #123-360	1000 ohm W.L. resistance unit

REQUIRED CHANGES

Refer to drawing 811.

Remove the two 250 ohm corrector relay resistances.

Insert 1000 ohm resistance in left hand resistance block.

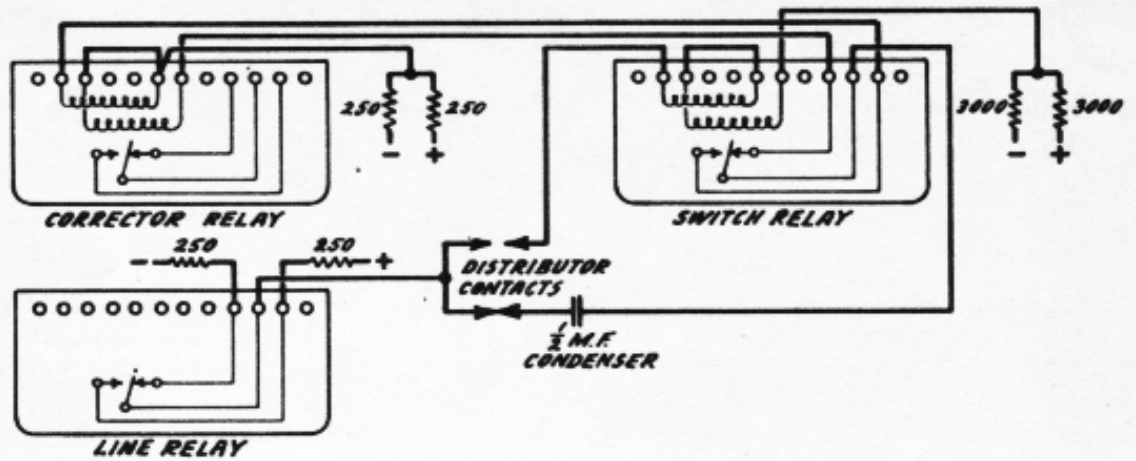
Insert 100 ohm resistance in right hand resistance block.

Disconnect and tape negative battery strap on lower terminal of left hand resistance block.

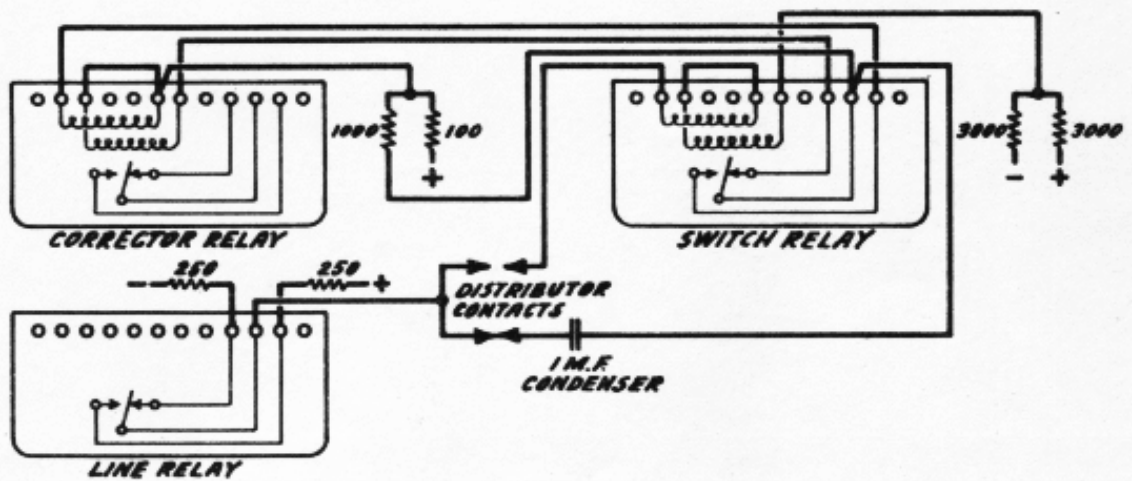
Replace 1/2 m.f. corrector relay condenser with 1 m.f. condenser.

Run wire from left hand terminal of 1 m.f. condenser (one that goes to switch relay tongue) to lower terminal on left hand resistance block.

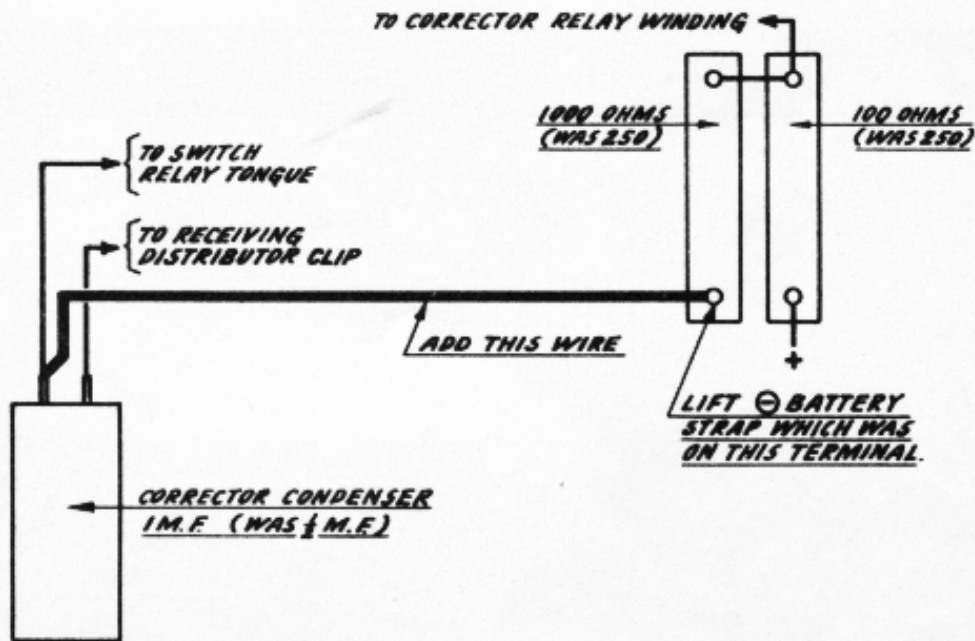
Some sets with the above changes have been shipped. Examination of the corrector relay resistances will indicate whether or not change has been made.



OLD CORRECTOR CIRCUIT



NEW CORRECTOR CIRCUIT



MORRUM-KLEINSCHMIDT CORPORATION

811
SEPT. 14, 1926.

CORRECTOR CIRCUIT CHANGE ON MULTIPLEX DISTRIBUTOR TABLES.

DRAWN **A.D.**
TRACED **A.D.**
CHECKED
ENG'R'D **A.S.B.**
APPROVED *[Signature]*