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**DESCRIPTION AND ADJUSTMENTS
REMOTE CONTROL**
(SEKX5, R18 and SE7)

TELETYPE

CORPORATION

SUBSIDIARY OF

Western Electric Company

CHICAGO, U. S. A.

DESCRIPTION AND ADJUSTMENTS

REMOTE CONTROL

(SEKX5, R18 and SE7)

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DESCRIPTION

This system consists of three pieces of apparatus: the Control Keyboard Transmitter, the Control Receiver, and the Relay Bank. The latter two comprise the receiving unit.

THE KEYBOARD UNIT

The Control Keyboard Unit is a motor driven "start-stop" contact controlling device. The contacts are opened and closed by a revolving cylinder. The transmitting contacts are under control of nine keylevers. The keys are numbered from 1 to 8 and the 9th key is marked "clearout key." The keyboard is portable and compact. A picture of this unit is shown in (Illus. 2).

THE RECEIVING UNIT

This unit consists of the Control Receiver and the Relay Bank (Illus. 1), both of which are housed in a case that is portable and enclosed. Thirteen binding posts are mounted on the back of the instrument. Eight of these are for control, two for input connections from a radio relay and three for power connections. The receiving contacts on the Control Receiver (Illus. 1) are opened and closed by a revolving cylinder and are used to distribute the incoming signals, received by the radio relay, to the selecting magnets of the Relay Bank.

OPERATION OF THE KEYBOARD TRANSMITTING MECHANISM

The transmitting mechanism of the Control Keyboard Unit consists of a set of keys, keylevers, a bank of sending contacts, operating cams, gears, clutch, and a driving motor. The motor is maintained at a constant speed by the regulating governor. The sending cams are driven by this motor through the medium of a friction clutch, the cam cylinder normally being held stationary.

Beneath the keylevers are four transverse selector bars and a universal bar extending across the width of the keyboard. The selector bars are provided with saw-tooth shaped notches as shown in Figure 1 according to the requirements of the signalling code. These bars rest on rollers and are guided at each end so that they may be easily moved endwise. When a key is depressed, the keylever strikes the slanting sides of these notches, moving the bars either to the right or left, depending upon whether the impulses corresponding to the bars are to be open or closed circuit impulses. When a key is depressed the universal bar is also operated, disengaging the operating lever from the notch in the cam cylinder allowing it to revolve. At the end of the revolution the operating lever again engages the notch in the cam cylinder bringing it to a stop until the next key is depressed.

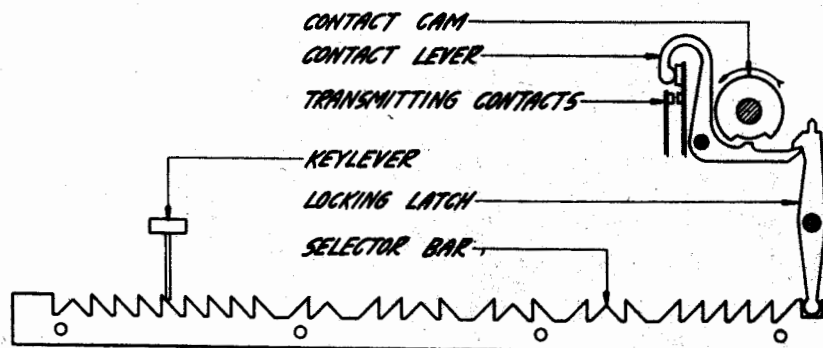
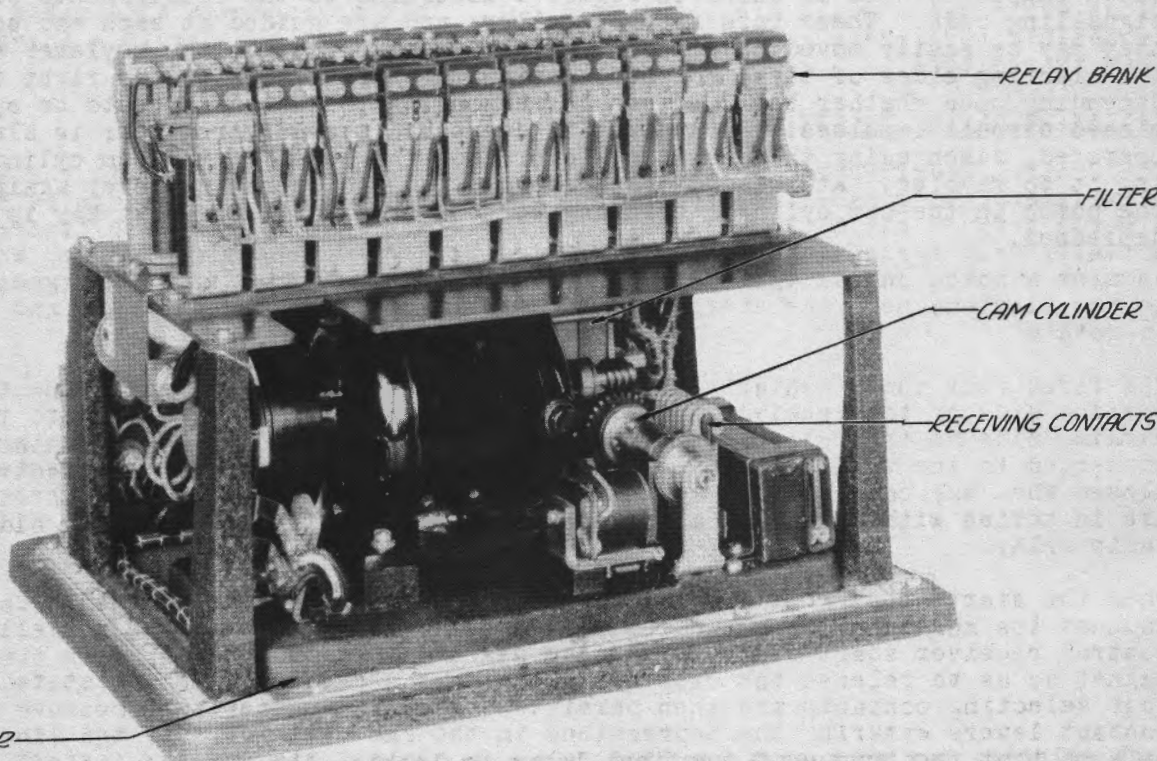


FIGURE 1.

Each selector bar engages a vertical lever or locking latch at its right-hand extremity, and positions it to correspond with the signal impulses to be transmitted. Each locking latch controls the motion of a contact lever by either allowing the contact lever to close its contact when the cam cylinder revolves, or restricting the motion of the contact lever. If the upper end of the locking latch is positioned to the left, see Figure 1, corresponding to an open circuit



RECEIVING UNIT WITH CONTROL RECEIVER
ILLUSTRATION 1.

(spacing) impulse, it engages the contact lever and prevents it from rising into the indent in the cam as it rotates, thus holding the circuit open for that impulse. However, if the locking latch is positioned to the right (see Figure 2), corresponding to the closed current (marking) impulse, it does not interfere with the movement of the contact lever. Then as the cam revolves, the contact lever rides on the cam surface and rises into an indent, thereby allowing its contacts to close, sending out a marking impulse. As the cams rotate, the first four impulses either marking or spacing, are transmitted in succession. The closing of the fifth and sixth contacts then follows, operated during each revolution of the cam cylinder. The fifth contacts send out a marking or closed impulse. The sixth contacts open at the end of every revolution to transmit the stop impulse and close at the beginning of the next revolution to transmit the stop impulse and close at the beginning of the next revolution to transmit the start impulse. At the end of the revolution the cam cylinder is again stopped by the operating lever which prevents the cam cylinder from rotating further until the next key is depressed. A locking loop which is raised by a cam at the end of each revolution prevents any

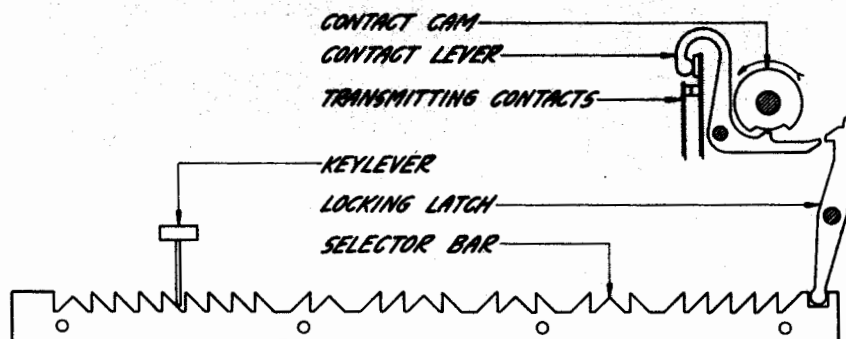


FIGURE 2.

change in the selection set up, by holding the locking levers in their set positions while the signals are being sent out. This arrangement also makes it impossible to depress another key until the signal for the previous character has been transmitted.

Operation of the Receiving Unit.

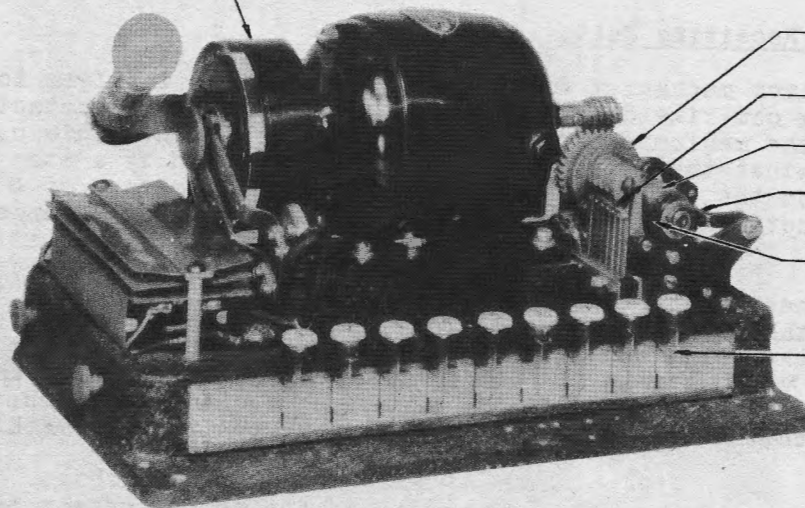
The Control Receiver mechanism distributes the received impulses to the Relay Bank. A cylinder having cam-like depressions which controls seven contacts is driven by a motor through the medium of gears and a friction clutch. This cylinder is normally held against the friction exerted by the clutch by a stop arm which engages a notch on the cylinder. This arm forms the armature of a magnet, known as the start-magnet, the energization of which releases the cylinder and allows it to rotate.

The first four inner contacts (1 to 4) as shown on W.D. #1396 are connected to the spacing side of the receiving (radio) relay. The fifth is connected to the marking side of the relay and the sixth to battery. The six outer contacts are connected to the various relays. The seventh set of contacts (S contacts) are closed when the cam cylinder is in its normal or stopped position. These contacts are in series with the start magnet and are operated from the marking side of the radio relay.

When the start or current impulse is received, the tongue of the radio relay touches its marking contact and completes the circuit through the normally closed control receiver start contacts and the start magnet, which energizes the start magnet so as to release the stop arm allowing the cam cylinder to rotate. The four selecting contacts are then permitted to close successively because of the contact levers entering the depressions in the cam cylinder. If the line signal is such that the tongue of the line relay is against its spacing contact when any pair of selecting contacts are closed a circuit will be completed through these contacts to their corresponding fan circuit relays in the relay bank. The selecting impulses received on the radio relay are thus distributed through the contacts to the proper fan circuit relays thereby setting up the selection on the receiving unit. Further rotation of the cam cylinder causes the fifth pair of contacts to close supplying battery from the relay tongue (the fifth impulse is



GOVERNOR



FRICTION CLUTCH

TRANSMITTING CONTACTS

CAM CYLINDER

LOCKING LOOP

OPERATING LEVER

KEYLEVER

CONTROL KEYBOARD TRANSMITTER
ILLUSTRATION 2.

always marking) through the fan circuit relay contacts to the selected control lock relay magnet. The control lock relay then locks itself in. The selection of the control lock relay having been made, the cam cylinder next closes the sixth pair of contacts which supplies a local impulse to the fan break relay breaking the power which locks in the fan circuit relays. When the rotation of the cam cylinder has been completed, the stop armature controlled by the start magnet engages its notch and prevents the cam from rotating further until the next start impulse is received.

SIGNALLING CODE

The signalling code employed to transmit the selections is comprised of four selecting units. If a given unit of time be divided into four intervals, during each of which current may or may not be transmitted, it is possible to produce sixteen different combinations of current and no current intervals. However, as only nine combinations are needed on the radio control provision for only this amount is made. The code is shown graphically in the upper right hand corner of Wiring Diagram #1394.

RELAY BANK

The relay bank consists of twenty relays. Eight are the fan circuit relays, one the fan break, one the clearout, two the divide, and eight the control lock relays.

Fan Circuit Relays.

The operation of the fan circuit relays are controlled by the receiver contacts and receiving relay. These relays set up a path to the control lock relay selected.

Fan Break Relay.

The fan break relay is operated by the sixth contact on the receiver and breaks the power which locks in the fan circuit relays once each revolution.

Divide Relays.

The function of the divide relay is to break all but one path passing through the contacts and tongues of the fan circuit relays. This path is the one terminating in the clear-out relay. The divide relay operates immediately on selection of a control lock relay, because it is in series with the locking battery circuit of the latter.

Clear-Out Relay.

The clear-out relay breaks the power locking in a control lock relay and also the current flowing from the lock relay contacts to the controlled instrument.

Control Lock Relay.

The control lock relay causes the operation of the various controls.

Blueprint 1395 shows the wiring in the transmitting keyboard S E K X 5.

Blueprint 1396 is the wiring diagram of the receiving distributor (R 18). In the normal stopped position contacts S are closed so that the reception of the start pulse will energize the start coil to initiate rotation of the cam shaft. Contacts 1, 2, 3, and 4 are closed in succession and connect the fan circuit relays 1, 2, 3, and 4 successively with the spacing contact of the receiving relay.

When contacts 5 close, the marking contact of the receiving relay is connected to the second tongue of number 1 fan circuit relay. When contacts 6 close, battery is connected to the fan break relay which causes a de-energization of all of the fan circuit relays.

Referring to the code combinations shown on Wiring Diagram 1394, it will be seen that intervals 1, 2, 3, and 4 are variable, whereas intervals 5, 6, and 7 are invariable.

Let us trace the operation of the relay bank for the first control signal. The start interval will cause the Radio relay to move its tongue against its marking contact, putting current into the start magnet and initiating the rotation of the cam shaft.

When contacts "1" close, the receiving relay will be against its spacing contact and current will flow into number 1 relay of the fan circuit which will lock itself up with battery from the contact of the fan break relay which is supplied to the left hand contacts of all the fan circuit relays. Likewise when contacts "2" and "3" are closed, current will flow into fan circuit relays 2 and 3 and they will lock up. When contacts "4" close, the relay will be against its marking contact and consequently no current will flow into number 4 fan circuit relays and they will remain unoperated.

When contacts "5" close, the radio relay will be against its marking contact and current will flow to the right hand tongue of relay 1 through the lower contact to the right hand tongue of relay 2, through the front contact to the right hand tongue of relay 3, through the front contact to the right hand tongue of relay 4 and as this relay is unoperated, will flow through the rear contact and thence to the right hand tongue of the divide relay, through the corresponding contact to control relay number 1, which will operate and lock itself in with battery from the contact of the clear-out relay. It should be noted that this locking battery flows through the divide relay so that the divide relay contacts will now be opened. Current from the clear-out relay also flows directly to the left hand contact of the control relay and through the left hand tongue to number 1 binding post and consequently to the control apparatus.

When contacts "6" close, battery will flow into the coil of the fan break relay.

This will open the contacts of this relay cutting off the locking battery from all of the fan circuit relays and they will be restored to their normal unoperated condition. This impulse which operates the fan break relay is, of course, only momentary so that its contacts are again closed and locking battery is again supplied to the fan circuit relay contacts.

We have now operated a single control relay which has remained operated though the fan circuit relays have been restored to normal. It should be noted that the divide relay contacts are still held open since the locking battery for the control relay passes through the divide relay also. This arranges the circuits in such a way that the only signal that can accomplish any result, is a clear-out signal.

For example, suppose that with the circuits so arranged number 5 signal is transmitted. From the code diagram it is seen that relay number 1 only of the fan circuit will be operated and when the contacts "5" close, current will flow to the right hand tongue of relay number 1 and through the front contact thence to the right hand tongue of relay number 2 and through its rear contact and thence to the extreme left hand tongue of the divide relay. However, at this time the divide relay contacts are open so that the circuit is open at this point and consequently the corresponding control relay cannot be operated. When contacts "6" close the fan break relay will be operated as before. It will unlock fan circuit relay number 1 restoring the fan circuit to normal.

If you will trace the operation of the fan circuit for any other combination, you will see that the result is the same in every case, except for the clear-out combination. Let us now trace the operation when the clear-out is received. From the code diagram it is seen that fan relays 1, 2, 3, and 4 are operated. Therefore, when contacts "5" close, battery will flow to the right hand tongue of relay number 1, through the front contact to the right hand tongue, and front contact of relay number 2, to the right tongue and front contact of relay number 3 to the second tongue and front contact of relay number 4 and thence through the coil of the clear-out relay to ground. The clear-out relay contacts will thereupon be opened and the locking battery cut off the control relays and the divide relay. Contacts "6" closing immediately after will operate the fan break relay unlocking all of the fan relays and consequently all of the relays of both the fan circuit and control will be restored to normal.

It is obvious that if a stray signal should operate the radio relay causing the rotation of the cam shaft, this would have no effect on any control relay that was locked up, unless the stray signal should operate the relay in a manner exactly similar to the clear-out signal.

Of course, if no control relay is locked up, strays might cause the operation of some control relay, but it could be unlocked by transmission of the clear-out signal.

A 128 V.P.S. tuning fork is provided for setting the speed of both the transmitter and the receiving distributor. The gearing of these two units is such that with the same motor speeds the transmitter will run at 120 R.P.M. while the receiver operates at 136 R.P.M.

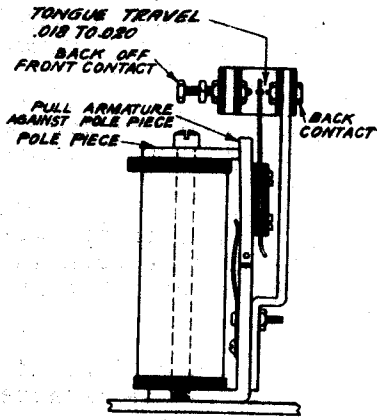
This is the proper speed difference to allow sufficient stop time and, of course, is compensated for by the different spacing of the cam cuts of the receiver and transmitter.

FILTER UNIT

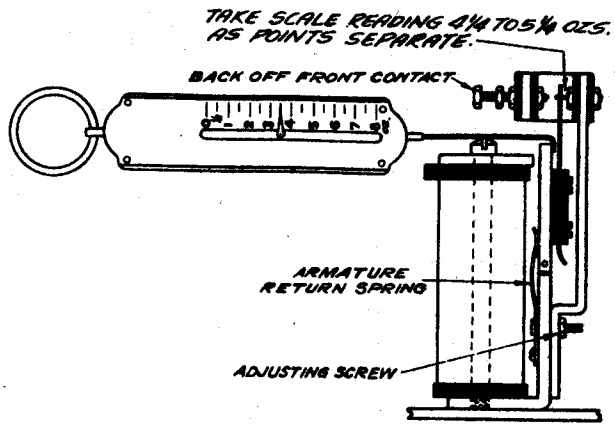
Mounted within a bracket, beneath the relay base on the selector unit, is a bank of condensers and a 50 ohm resistor. It is provided for the purpose of suppressing interference to radio receivers in close proximity.

The condensers and resistors are connected to the receiving contacts on the receiving unit and to the relay contacts as shown on Wiring Diagram #1394, SE-7 Selector with Filter.

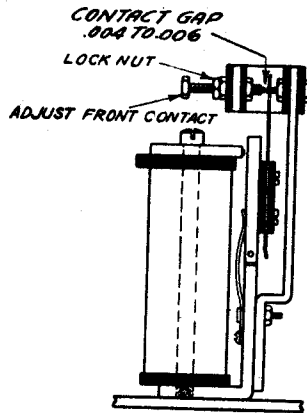
On the transmitter keyboard, a condenser is connected to the transmitter contacts as shown on Wiring Diagram #1394, SEKX-5 Transmitter Keyboard.



(A)



(B)



(C)
FIG. 3.

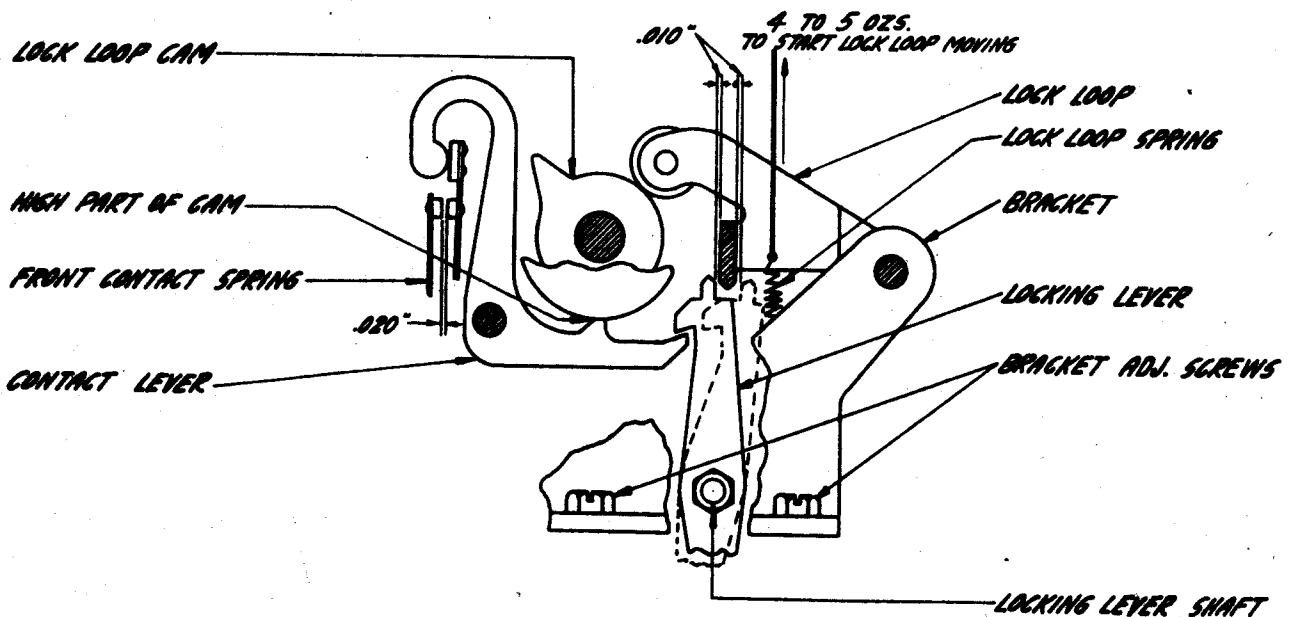


FIG. 4.

ADJUSTMENTS

Relays

The contact points of the relays are made of silver and should require little attention due to the comparatively small number of operations of the selector. Occasionally a burnisher should be passed between the relay contacts to dislodge any dust which may have accumulated, or to remove any oxidation caused by the operation of the relays.

Relay Tongue Travel, Figure 3(A)

To adjust the tongue travel, first back off the front contact screw. Move the armature slowly until the contact tongues leave the back contact and note if both contacts leave the back contacts at exactly the same time. If they do not, they should be bent until they line up properly.

After lining up the tongues, the travel should be adjusted so that when the armature is held against the pole piece, the gap between the tongue and the back contact should be from .018" to .020". The amount of the gap can be regulated by loosening the screw which holds the pole piece and sliding the pole piece one way or the other until the proper gap is secured. The screw should again be tightened.

Armature Spring Tension, Figure 3(B)

After the relay contact tongues have been lined up and the tongue travel adjusted, the tension of the armature spring should be checked. This is done by hooking a spring balance to the upper part of the relay armature and a reading taken just as the contact tongue leaves the back contact. The scale should read 4-1/4 to 5-1/4 ozs. The tension of the armature spring is regulated by means of the spring adjusting screw. To make the adjustment, loosen the lock nut and turn the screw to the right to decrease the tension, and the opposite direction to increase the tension. Be sure to tighten the lock nut after each adjustment.

Relay Contact Gap, Figure 3(C)

With the relay in its normal position, the front contact screws should be turned in until they come within .004" to .006" of an inch of the contact tongue. Then tighten the locknut.

In view of the fact that the fan break relay and the clear-out relay break considerable current, the contact gap on these two relays should be from .008" to .010" instead of .004" to .006", the other adjustments being the same as given for the other relays. This increased contact gap insures a positive break and prevents excessive burning of contacts.

KEYBOARD TRANSMITTER UNIT ADJUSTMENTS

Lock Loop Spring, Figure 4.

With lock loop roller resting on low part of its cam it should require from 4 to 5 ozs. to just start lock loop moving, pulling in line with the spring.

Locking Levers, Figure 4.

Depress any key and rotate the transmitting shaft until lock loop roller rests on the low part of its cam. When in this position there should be at least .010" clearance between any locking lever finger and the lock loop blade.

This adjustment can be made by loosening the four screws which hold the main bracket and shifting bracket.

Contact Gaps, Figure 4.

With the contact lever on the high part of cam the contact gap should be .020". Bend front contact spring to obtain this.

Contact Tensions, Figure 5.

With the contact lever in the indent of its cam the back contact spring should be adjusted so that it will require a tension of from 2 to 3 ozs. to just open contacts.

Re-check contact gaps after setting spring tensions.

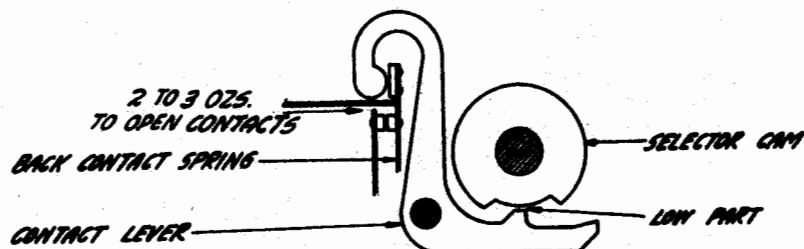


FIGURE 5.

Clutch Tension, Figure 7.

The receiving and transmitting cam cylinders are revolved by a friction drive, the discs of which are made of hard felt, and are located at the ends of the cylinder. These discs should not be permitted to become glazed and should be kept soaked with oil. A pull of from 15 to 20 ozs. should be required to stop the rotation of the cam cylinder. With motor running, hook a spring balance into the slot in the stop cam and pull against the direction of rotation of the cylinder.

Operating Lever Adjustment.

Adjust the operating lever adjusting screw (located beneath the keyboard base) so that when any keylever is fully depressed, the upper end of the operating lever clears the notch in the cam cylinder .004" to .006". Tighten the adjusting screw lock nut.

RECEIVING DISTRIBUTOR ADJUSTMENTS

Contact Lever Adjustment, Figure 6.

The contact levers must ride through the center of the cam cylinder indents. Loosen the two screws of the contact bracket assembly, and shift the bracket. There must be at least .006" space between the 6th pulse contact lever and the steel washer at the end of the cam cylinder.

Contact Gaps.

With the contact lever on the high part of the receiving cam cylinder, adjust the front contact spring to give an opening of .010" between the contact points. (In the same manner as shown in Fig. 4 of the Keyboard Transmitter Adjustments.)

Contact Tensions.

Rotate the cam cylinder until the contact lever is in the bottom of the indent. Pressing against the back contact just above the contact point, it should require from 2 to 3 ozs. to just open the contacts. Bend the back contact spring to secure this tension. Re-check the contact gap after making this adjustment. (See Fig. 5 of Keyboard Transmitter Adjustments.)

See "Clutch Tension, Figure 7" under "Keyboard Transmitter Unit Adjustments."

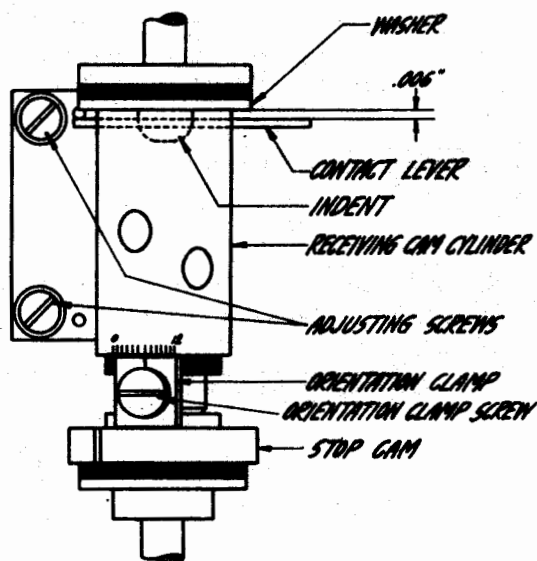


FIGURE 6.

Start Magnet Adjustment, Figure 7.

The start magnet should set so that the face of the armature is parallel to and bears evenly against the face of the stop cam. With the armature held firmly against the start magnet, there should be a clearance of from .005" to .008" between the face of the stop cam and the edge of the hook on the armature. Both these adjustments are made by moving the start magnet bracket.

The start magnet must be removed to make the adjusting screws accessible. If the armature isn't positioned correctly in respect to the stop cam there will be a tendency of the armature to fail to latch or to slip off.

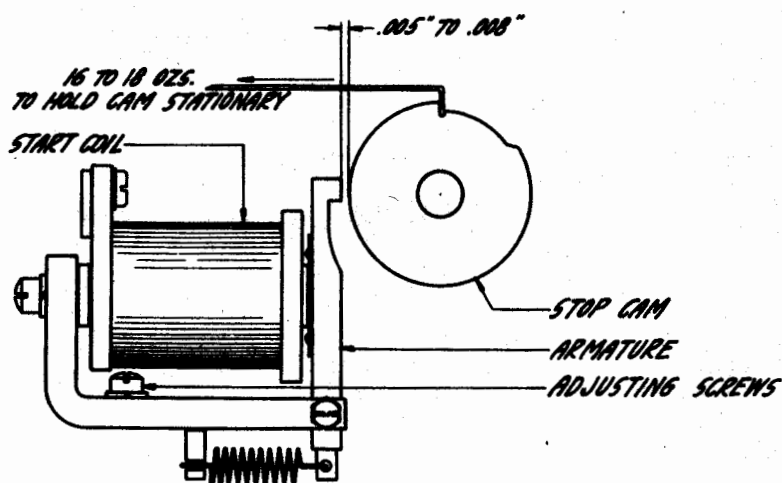


FIGURE 7.

Start Magnet Armature Spring Tension, Figure 8.

To measure the armature spring tension, hook the spring balance at the spring hole of the armature and pull horizontally. With the armature in low part of cam, it should require from 6-1/2 to 8 ozs. to move the armature.

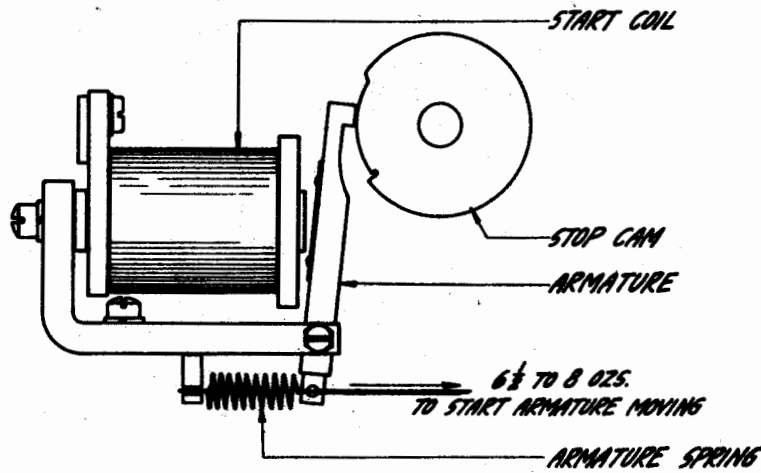


FIGURE 8.

GOVERNOR ADJUSTMENTS

Speed Adjusting Wheel Friction Washer Spring Tension, Figure 9.

Remove the brush spring plate, and the governor cover with target (Fig. 11).

Turn the adjusting wheel so that the tension on the governor contacts is from 13 to 14 ozs. Measure this tension by hooking a 32 oz. scale over the contact spring arm next to the contact and pulling parallel to the speed adjusting spring.

To measure the tension of the speed adjusting wheel friction washer, insert a bank pin in the leather rim (radially) and hook a 32 oz. spring balance over the pin, at the periphery of the adjusting wheel and pull at right angles to the radius. It should require from 8 to 16 ozs. to just start the wheel moving. To adjust this tension remove the friction washer and bend the large projections.

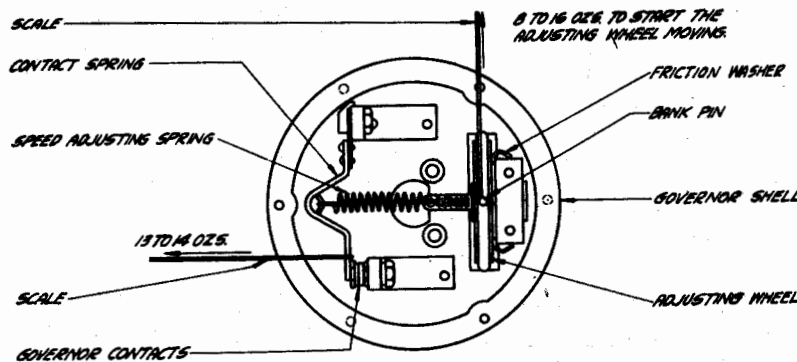


FIGURE 9.

Inner and Outer Disc Contact Spring Adjustment, Figure 10.

The inner and outer disc contact springs are adjusted by bending so that:

- (a) The distance from the inside surface of the governor cover to the highest point on the contact springs is $25/32$ " to $27/32$ ".
- (b) Place a "D" (138-26) socket wrench over the nut located in the center of the governor cover that is used to hold the contact springs in place. With a 6" scale measure the radial distance from the vertical surface of the wrench to

the point where the scale touches the curved surface of the inner disc contact spring. This should be $17/32"$ to $19/32"$.

- (c) In a similar manner measure the distance from the wrench to the point of contact on the outer disc contact spring. This should be $7/16"$ to $1/2"$.

Remove the "D" wrench and replace the governor cover, target and brush spring plate.

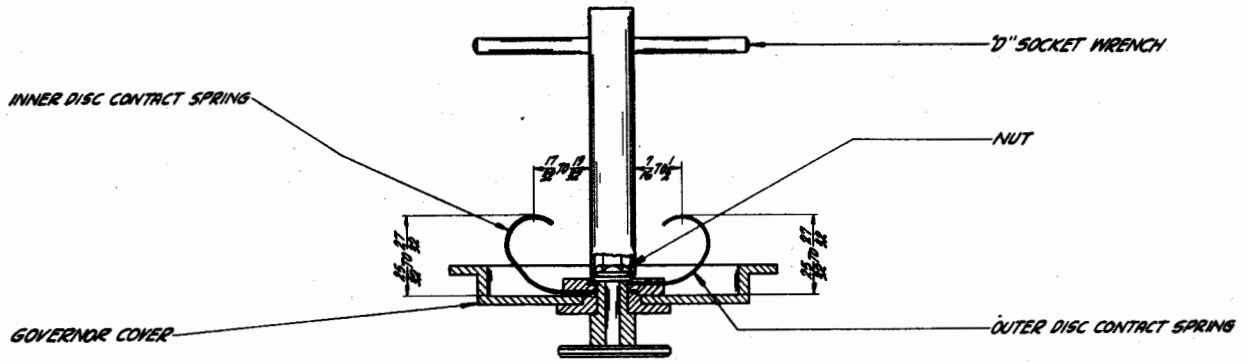


FIGURE 10.

Governor Brush Spring Plate Bracket Adjustment.

Adjust the brush spring plate bracket by means of its enlarged mounting holes so that:

1. A line through the center of the outer disc also passes through the centers of both contact brushes (Fig. 11).
2. The surface of the brush spring plate on which the brush springs are mounted is in line with the outer surface of that part of the governor cover in which the mounting holes are located (Fig. 12).

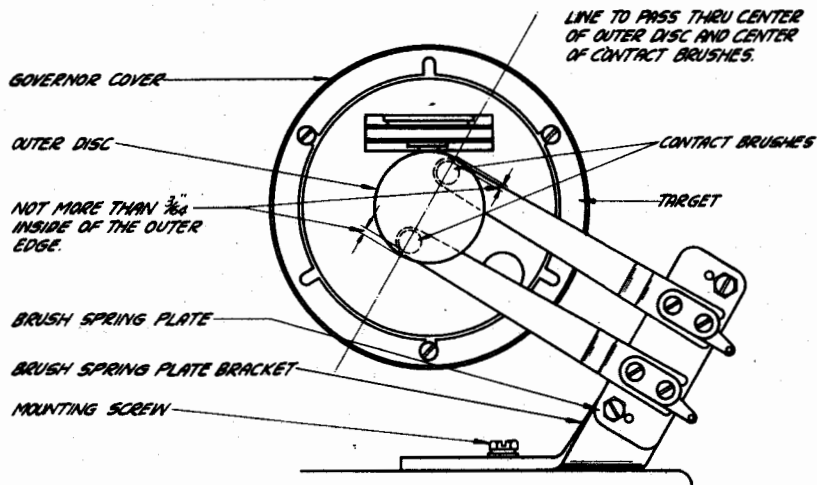


FIGURE 11.

Governor Brush Spring Tension, Figure 12.

- A. Inner Disc Brush Spring: Hook an 8 oz. scale over the inner spring, just in front of the carbon contact brush. Pulling horizontally away from the motor, it should require from $4-1/2$ to $5-1/2$ ozs. to start the brush moving away from the inner contact disc.

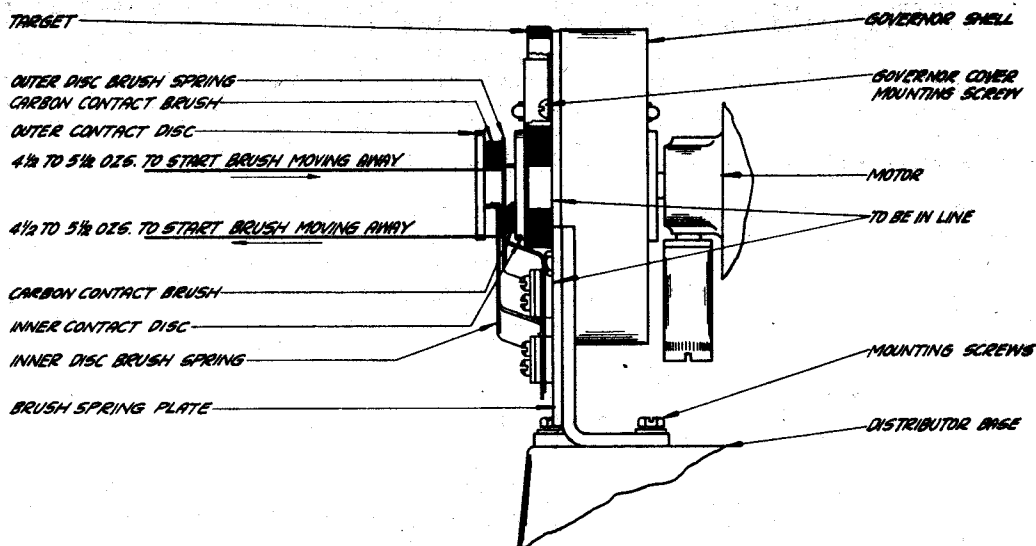


FIGURE 12.

B. Outer Disc Brush Spring: Apply an 8 oz. push scale against the outer brush spring, just in front of the carbon contact brush. Pushing horizontally toward the motor, it should require from 4-1/2 to 5-1/2 ozs. to start the brush moving away from the outer contact disc.

To obtain the correct brush spring tension, remove and bend the brush springs. When the springs are replaced and tension obtained, take care that the contact brushes lie flat against their respective discs, and that the outer edges of the brushes are either flush with or not more than 3/64" inside the outer edges of the discs (Fig. 11).

SPEED SETTING

The tuning fork supplied is used for the purpose of regulating the motor speed. The fork is equipped with shutters attached to the ends of the tines.

On the rim of the motor flywheel is attached a speed target of alternate black and white spots.

Tap the fork lightly - just enough to start it vibrating - a sharp blow may cause the shutters to buckle. Hold the fork close to the eye and view the moving spots on the flywheel through the shutters. If the spots appear to be moving in the direction of rotation, the motor speed is too high. The speed is too low if the spots appear to move in a direction opposite to that of rotation. The speed is correct when the spots seem to be stationary. The motor speed may be decreased by pressing the hand against one surface of the moving flywheel. This causes the adjusting wheel to be moved in such a way as to decrease the tension of the governor armature, thereby slowing down the motor.

The speed may be increased by repeating the same performance on the other side of the flywheel. This will increase the tension of the governor armature spring and speed up the motor.

ORIENTATION

It is assumed that before an orientation range is taken, that the transmitting and receiving relays and the selector equipment adjustments are correct, and that the speed of the keyboard and receiver is carefully set. After this has been done, the #4 control key on the keyboard should be held depressed which will cause the #1 and #4 fan circuit relays on the selector unit at the receiving end to continually operate, if the range setting is within the working limits.

Loosen the receiving cam cylinder clamping screw (See Figure 1 in Bulletin #129) and shift the cam cylinder in a clockwise direction until errors occur in the selections of the #1 and #4 fan circuit relays, noting the position of the cam cylinder scale. Now move the cylinder in a counter clockwise direction very carefully to a point where the #1 and #4 fan circuit relays again fail to operate. The final setting of the cam cylinder should be midway between the two limits where the #1 and #4 fan circuit relays are operated satisfactorily.

The high extreme end of the range is limited by the operation of the sixth pulse contacts. The sixth pulse contacts should close and open before the armature stops the cylinder which in most cases occurs when the indicating mark on the clamp is at the end of the seventh division (reading the divisions on the cam cylinder from left to right). Therefore, the range is usually located inside of the first seven divisions.

LUBRICATION

Proper attention to lubrication is of the utmost importance. If the machine is properly lubricated in accordance with the following instructions, the period between lubrications can be set at one month for eight hour per day service. If the service is heavier than this the time between lubrications should be shortened in proportion, thus for twenty-four hour service the printers should be lubricated three times per month.

Where grease is specified any good grade of medium cup grease may be used. Veedol medium cup grease has been found to be satisfactory.

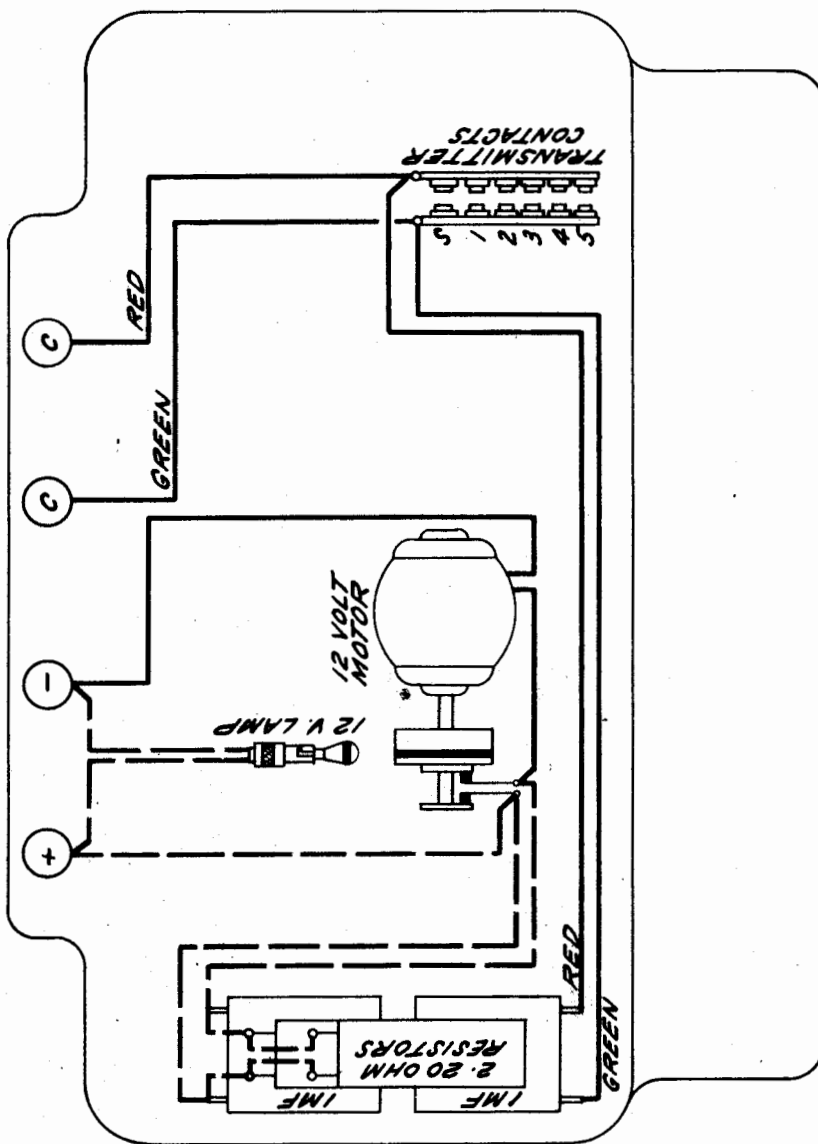
For oiling do not use very light oils such as typewriter oils or 3-in-1. These oils have not sufficient body. Oildag P-2 is especially recommended but any good light automobile motor oil such as Mobile Arctic or Veedol light may be used.

Apply oil to the following:

- (1) Receiving and transmitting clutch felt washers - pry the discs apart with a screw driver and saturate the felts.
- (2) Receiving shaft bracket bearings - front and rear.
- (3) Receiving cam cylinder - oil hole.
- (4) Stop armature screw bearing.
- (5) Receiving and transmitting cylinder - oil hole.
- (6) Transmitting shaft front bearing.
- (7) Transmitting shaft rear bearing.
- (8) Locking loop - two pivots.
- (9) Locking loop roller - one pivot.
- (10) Lockout levers - four bearings.
- (11) Contact levers - one drop of oil on side of each lever placed so that it will run down on pivot bearing.
- (12) Rear keylever bearing.
- (13) Tip keyboard back. Put drop of oil on each universal bar pivot and on each selector bar roller, also put drop of oil on each keylever just in front of selector bars.

Apply grease to the following:

- (1) To the gears and motor worms.
- (2) Trace of grease on surface of each cam of transmitting cam cylinder and on receiving cam cylinder.
- (3) Fill motor grease cups.



NOTE:
 — BLACK 'DELTABESTON' #18 ART
 SILK COVERED FIXTURE WIRE.
 ALL OTHER WIRES #22 SILK COVERED,
 EXCEPT MOTOR LEADS.

TELETYPE CORPORATION

1395
 OCT. 22, 1931

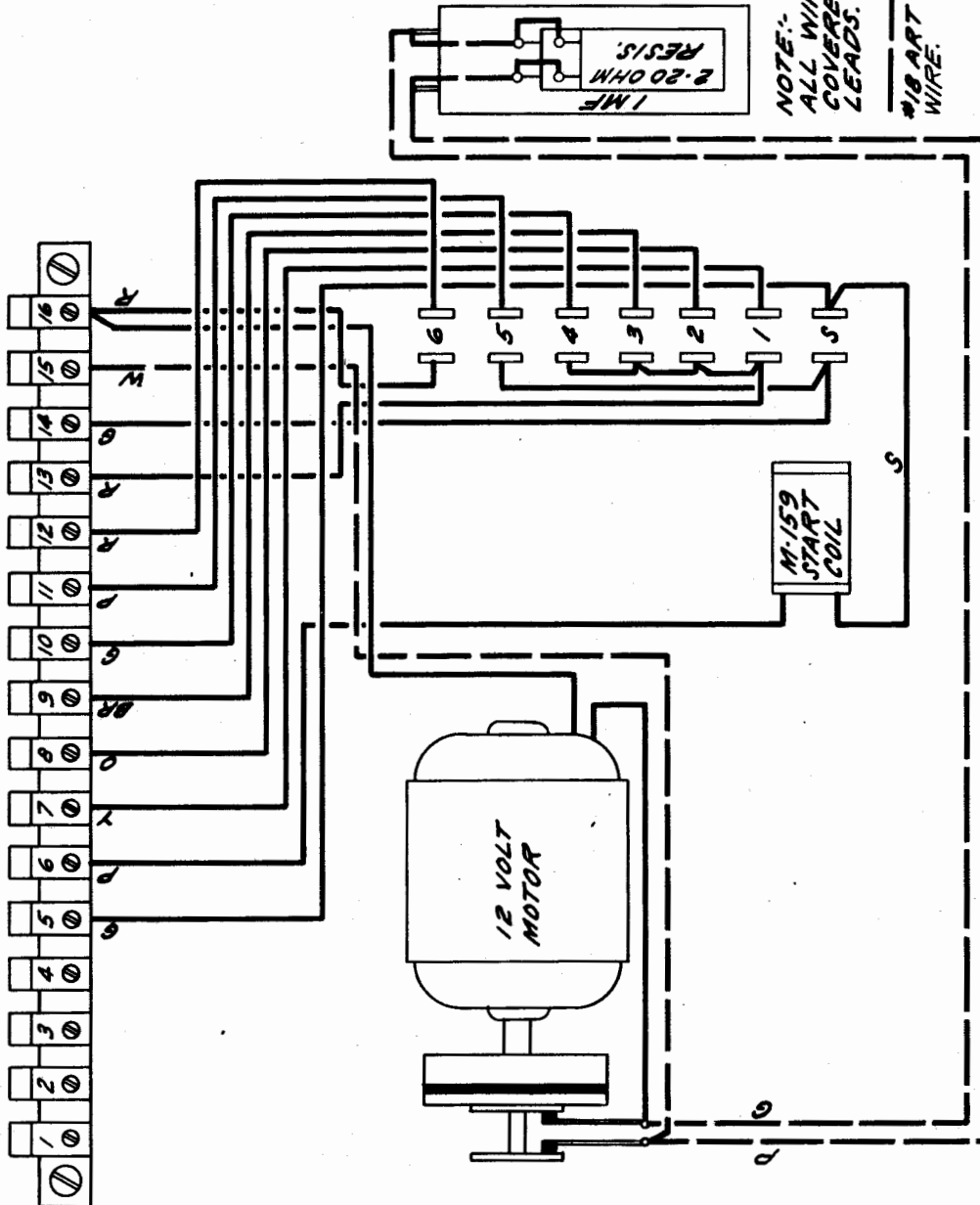
WIRING DIAGRAM
 SEKX-5
 TRANSMITTER
 KEYBOARD

DRAWN A.L.P.
 TRACED A.L.P.
 CHECKED D.K.N.
 ENG'RD E.P.H.
 APPROVED J.C.P.

REVISIONS

COLOR CODE	
Y.	YELLOW
G.	GREEN
BR.	BROWN
P.	PURPLE
W.	WHITE
O.	ORANGE
S.	SLATE
R.	RED
BK.	BLACK
LB.	LIGHT BLUE

NOTE:
 ALL WIRE TO BE #22 SILK COVERED EXCEPT MOTOR LEADS.
 #18 ART SILK COVERED FIXTURE WIRE.



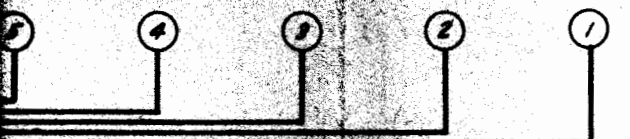
TELETYPE CORPORATION	
1396	
OCT. 22, 1931	
WIRING DIAGRAM	
R-18	
RECEIVER	
DRAWN	A.L.P.
TRACED	A.L.P.
CHECKED	V.R.N.
ENG. RD.	E.P.A.
APPROVED	<i>J.C.P.</i>

CODE
5 1 2 3 4 5 6

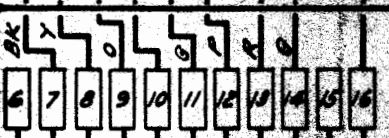
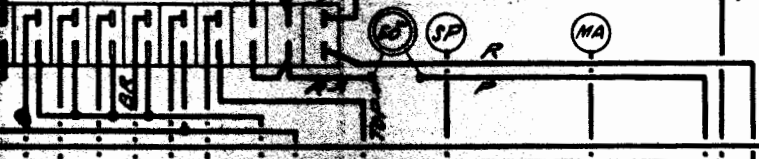
1						
2						
3						
4						
5						
6						
7						
8						
CLEAR OUT						

BLACK SQUARES INDICATE RADIO SIGNALS RECEIVED.
WHITE SQUARES INDICATE FAN CIRCUIT RELAYS SELECTED.

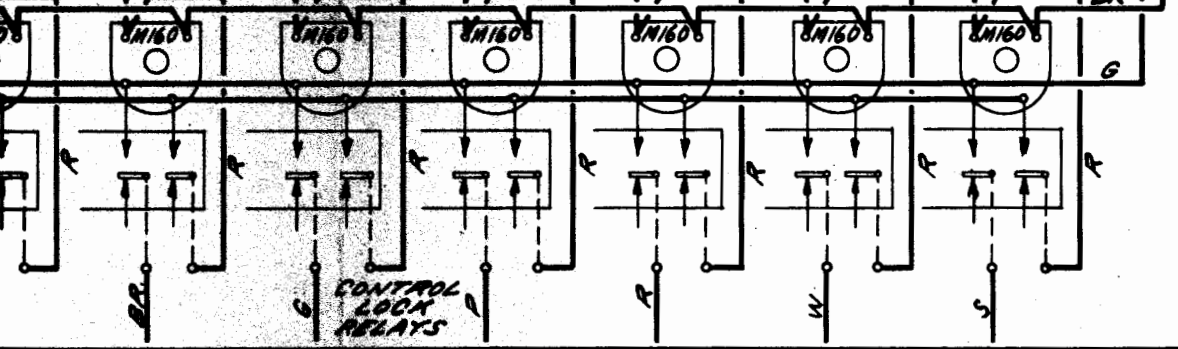
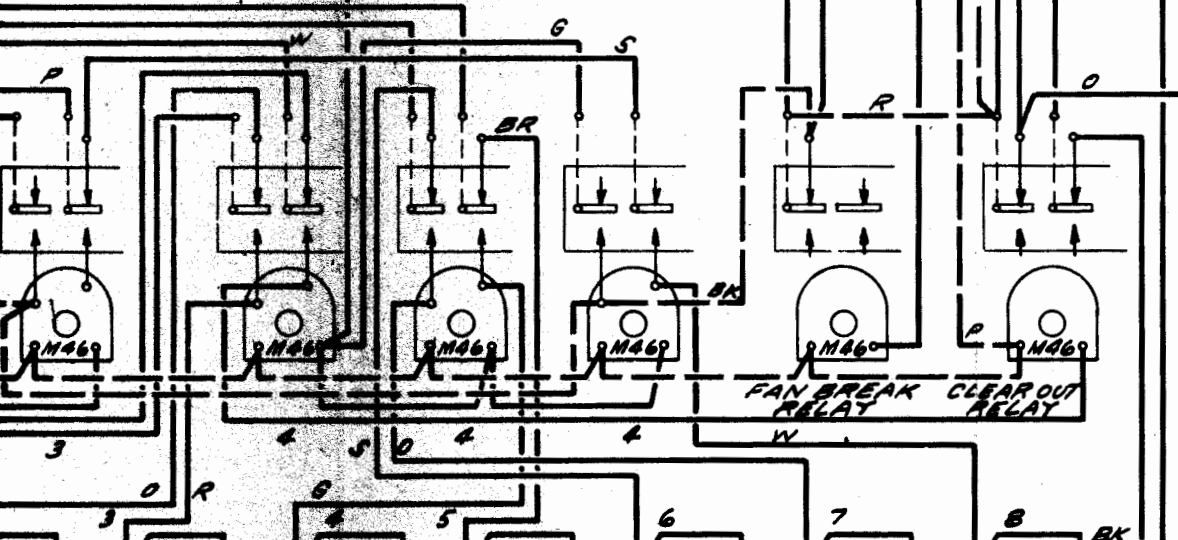
PL BINDING POSTS



1/10 MF CONDENSERS 1/2 MF CONDENSER 0



FAN CIRCUIT RELAYS



TELETYPE CORPORATION
1394
OCT. 9, 1931

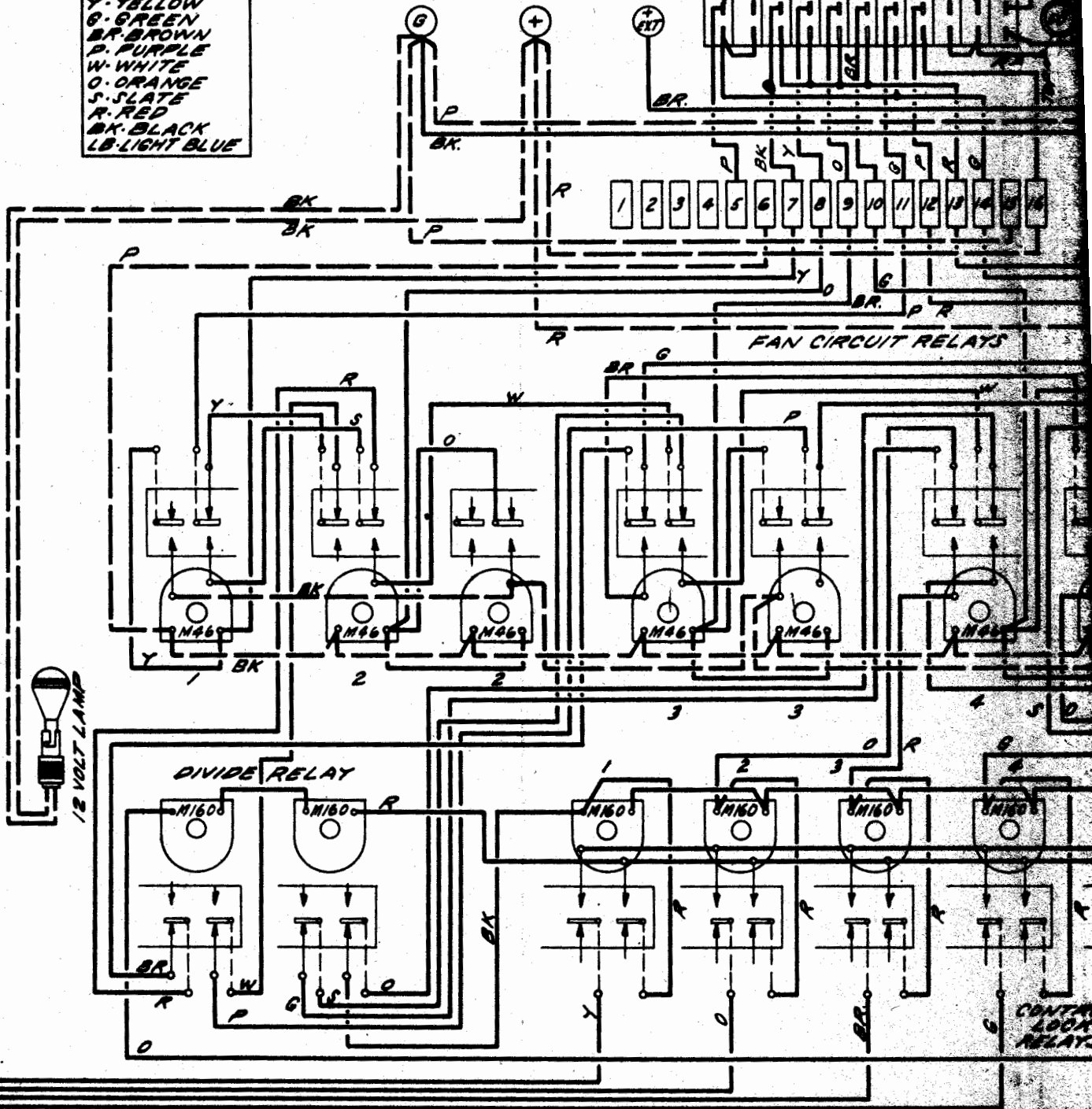
WIRING DIAGRAM
SE-7

SELECTOR WITH FILTER
DRAWN ALP
TRACED ALP
CHECKED URN
ENG'R'D. E.P.K.
APPROVED J.C.P.

CONTROL BINDING POSTS

COLOR CODE	
Y	YELLOW
G	GREEN
BR	BROWN
P	PURPLE
W	WHITE
O	ORANGE
S	SLATE
R	RED
BK	BLACK
LB	LIGHT BLUE

1/10 MF CONDENSERS



NOTE: — DELTABESTON #18 ART SILK COVERED
 FIXTURE WIRE.
 ALL OTHER WIRES # 22 SILK COVERED.