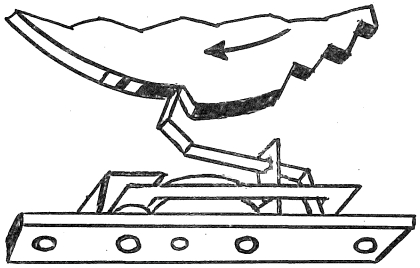
SERVICE SLANTS
YOUR QUESTIONS OR COMMENTS ON "SERVICE SLANTS" ARE WELCOME AT ANY TIME
ISSUED BY WURLITZER SERVICE DEPT. NORTH TONAWANDA, N. Y.

SUBJECT: Adjustment of Pulse Timing in Model 212 Master Unit, to Overcome Erratic Selection Action.

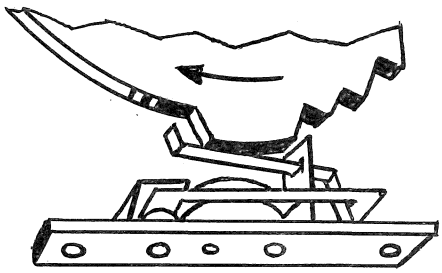
1. Before attempting to adjust the Model 212 Master Unit, the Model 219 Impulse Stepper and Model 216 Impulse Receiver which are being used in the installation should be carefully checked to be sure they are in correct adjustment and operating condition. Special attention should be given to adjustment of the stepper switch. At the time the stepper ratchet pawl begins to engage the tooth of the quadrant gear, the long switch blade should begin to deflect the short blade. It is very important that good wiping action is obtained to prevent burning or pitting of the points.

2. Check the shape of the pulsing switch arm. Drawing below shows correct and incorrect condition. (Pulsing switch is located at the front of the motor assembly, just behind the terminal board.) If the switch arm is adjusted to any extent, it will be necessary to compensate by adjustment of the selector contactor plate as described in step 4 of this bulletin.

Correct

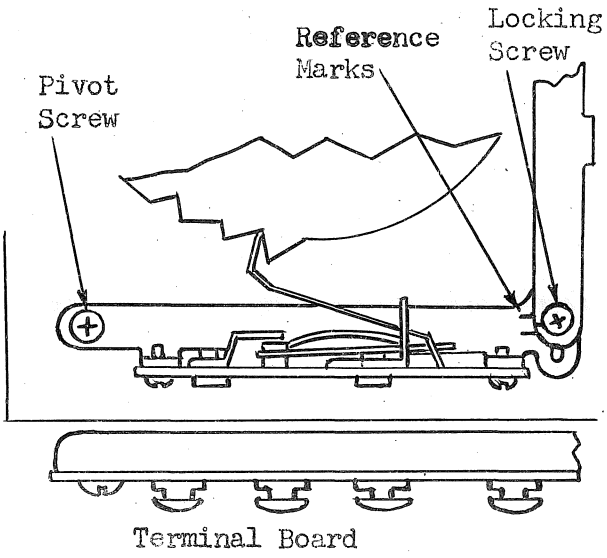


Incorrect



3. During the selection cycle, the Master Unit transmits the selection pulses in a definite time interval which will be of the same duration for the same number of pulses. If the pulses are too long, then the time interval between pulses will not be sufficient to allow the stepper arm to retract fully; while if the pulses are too short, they will be insufficient to actuate the stepper arm to its full travel. The object of adjusting the pulsing switch is to assure correct pulse timing, and hence, correct pulse length.

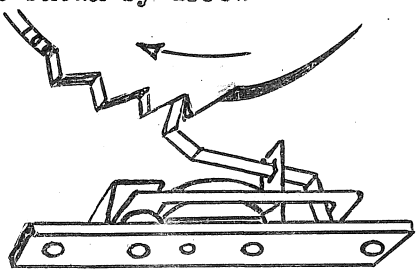
Loosen the two screws which lock the pulsing switch, and move the switch bracket toward or away from the cam, a little at a time, to find a position where consistent selection action results. This should be done by repeatedly selecting number 23, moving the switch bracket a little at a time, until number 23 is correctly selected. When this position has been reached, move the switch bracket away from the cam, a very little at a time, until a position is reached where the installation begins to produce number 22 when number 23 is selected. Make a reference mark on the switch brackets, then move the switch toward the cam, a little at a time, past the point of correct selection response, until a second position is found where number 22 selection results when number 23 is selected. Make a second reference mark on the switch brackets at this point.

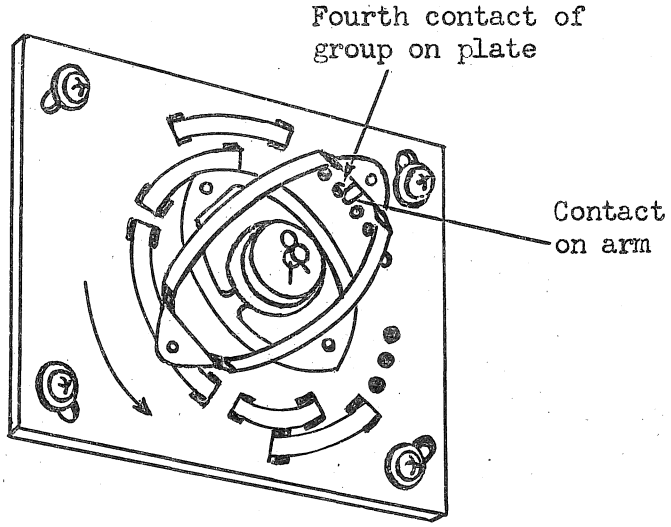


After these two positions have been determined and marked, set the switch midway between the two positions where erratic selection action begins, that is, half way between the two reference marks. Tighten the screws to lock the pulsing switch bracket in this position.

4. Adjustment of the selector contactor plate should only be attempted if it has been necessary to adjust the pulsing switch arm (Step 2) or if it is found impossible to achieve correct selection action by adjusting the pulsing switch timing. Rotate the pulsing cam by hand (do not rotate either of the contactor arms manually as this will result in incorrect positioning of the arms due to backlash) until the end of the pulsing switch arm rests in the "V" just before the last short segment on the cam. (See drawing below.) With the cam in this position, the contact on the long portion of the selector contactor arm (beneath chassis) should be just beginning to establish contact with the fourth in the group of five contact rivets, (See drawing below.) If this is not the condition, loosen the four screws which hold the contactor plate, and move the plate to the correct position, holding the contactor arm in its original position (against rotation in the direction shown by the arrow in the drawing below). Tighten the four screws, and check to be sure the pulsing cam has not shifted while the adjustment was made, by checking the position of the pulsing switch arm in the "V" before the last short segment on the pulsing cam. POSITIONING OF THIS CONTACTOR PLATE MUST BE DONE WITH THE GREATEST PRECISION.

Never attempt to rotate cams or arms in direction opposite to that shown by arrow





5. The check on the adjustment of the contactor plate is to cancel all credits from the accumulator, then register one credit and make selection number 23. If correct selection action results under these conditions, the adjustment is satisfactory. The overall check on the performance of the installation is to make selections 1, 4, 9, 13, 17, 21, 22, 23 & 24. Consistently correct action in making these selections is assurance of the correctness of the adjustments described in this bulletin.