

METROPOLITAN



TRANSIT

TROUBLE SHOOTING PROCEDURES R. T. CARS SERIES 2201-2350

**CHICAGO TRANSIT AUTHORITY
TRAINING AND ACCIDENT PREVENTION DEPARTMENT
9/69**

TRAIN WILL MOVE

As soon as trouble is indicated, notify the Line Supervisor. Then, locate column which gives the panel indication you now have. Follow actions suggested in that column until trouble is corrected or by-passed. If you have more than one panel indication, treat each one separately.

BLUE PANEL LIGHT COMES "ON" AND AUDIBLE ALARM SOUNDS
TROUBLE: Blown circuit breaker, dynamic brake failure or traction motor control failure
REPORT TROUBLE TO LINE SUPERVISOR AS "BLUE"
PROCEDURE FOR SHOOTING TROUBLE: <ul style="list-style-type: none">• WITH CONTROLLER HANDLE IN COAST, B1, B2 or B3 POSITION, OPERATE RESET/CUT-OUT SWITCH.• CHECK BLUE SIGNAL LIGHTS ON OUTSIDE OF TRAIN If no blue light is on, circuit breaker has reset. Continue in service If one or more blue lights are on, <ol style="list-style-type: none">1. Stop train2. Manually cut out all four actuators of car with blue light NOTE: If all cars of train have blue light "on," it will be necessary to couple to follower. See "Procedure for Coupling and Uncoupling"

YELLOW PANEL LIGHT REMAINS "ON" regardless of position of controller handle
TROUBLE: Parking brakes on one or more cars have not released
REPORT TROUBLE TO LINE SUPERVISOR AS "YELLOW, PARKING"
PROCEDURE FOR SHOOTING TROUBLE: LOCATE DEFECTIVE CAR OR CARS* <ul style="list-style-type: none">• If only one car of train has outside parking brake light "on," MANUALLY CUT OUT ALL FOUR ACTUATORS ON THAT CAR NOTE: The outside parking brake light remains "on" when actuators are cut out. The yellow panel light will go "off"• If all cars of train have outside parking brake lights "on"<ol style="list-style-type: none">1. RESET P5 SWITCH IN HEAD CAB2. RESET BRAKES3. If yellow panel light still does not go out, CHANGE TO ANOTHER OPERATING CAB (See "Procedure to Change Cabs")
* TO LOCATE DEFECTIVE CAR OR CARS: Reset brakes. Keep controller handle in "Coast" position. Defective car will have outside parking brake light "on."

WHITE PANEL LIGHT COMES "ON"
TROUBLE: Converter not charging; air comfort system malfunction; interior lights malfunction; P1 or P30 circuit breaker blown.
REPORT TROUBLE TO LINE SUPERVISOR AS "WHITE"
PROCEDURE FOR SHOOTING TROUBLE: <ul style="list-style-type: none">• If at terminal, REPORT DEFECT TO TERMINAL SUPERVISOR OR YARD FOREMAN IMMEDIATELY• If on line of road, REPORT DEFECT TO LINE SUPERVISOR IMMEDIATELY, then LOCATE DEFECTIVE CAR (Defective car has outside white light "on") Check defective car to make certain no unsafe or uncomfortable condition exists (examples: Heater smoking or overheating, air conditioning overcooling, light smoking, etc.) If unsafe or uncomfortable condition exists, cut out appropriate device by moving P switch in Circuit Breaker Panel Box to "off" position Interior Lights - P35 Air Comfort System - P32

EQUIPMENT DEFECTS NOT INDICATED BY TROUBLE LIGHTS AND ALARMS

In the event any of the following defects occur, check and reset the appropriate Circuit Breaker Switch in the Circuit Breaker Panel Box of the car with the defect.

DEFECTIVE EQUIPMENT	SWITCH
Door Controls	P31
Horn	P42
Public Address System	P31
Sander	P41
Signal Lights (all exterior lights and all interior lights except Blue and White)	P30 P43
Signs	
Track Brakes	
Will not operate	P14
Stuck down	Pull fuses in Circuit Breaker Panel Box
Windshield Wiper	P9

In the event the defective equipment fails to operate correctly after the Circuit Breaker Switch is reset or if the defect seems to call for immediate cut-out of equipment, the equipment can be cut-out by operating the appropriate Circuit Breaker Switch to the "off" position.

TRAIN WILL NOT MOVE

As soon as trouble is indicated, notify the Line Supervisor. Then, locate column which gives the panel indication you now have. Follow actions suggested in that column until trouble is corrected or by-passed. If you have more than one panel indication, treat each one separately.

YELLOW PANEL LIGHT REMAINS "ON"	GREEN PANEL LIGHT IS "OFF"	NORMAL PANEL INDICATIONS	YELLOW SIGNAL LIGHT "OFF" WHEN PARKING BRAKES ARE APPLIED; GREEN SIGNAL LIGHTS "OFF" WHEN DOORS ARE CLOSED AND WHITE SIGNAL LIGHT "ON"
TROUBLE: Defective emergency relay circuit	TROUBLE: Defective door or door circuit	TROUBLE: Defect in power control circuit	
REPORT TROUBLE TO LINE SUPERVISOR AS "YELLOW, EMERGENCY"	REPORT TROUBLE TO LINE SUPERVISOR AS "GREEN"	REPORT TROUBLE TO LINE SUPERVISOR AS "NORMAL PANEL"	TROUBLE: Blown P6 switch in operating cab (two controllers in train open at same time)
<p>PROCEDURE FOR SHOOTING TROUBLE:</p> <p>If the reason for the train being in emergency has been determined and IF THE CAUSE OF THE TROUBLE HAS BEEN CORRECTED, RESET THE BRAKES AND PROCEED.</p> <p>If the cause of the trouble is not known, CHECK P5 SWITCH IN HEAD CAB AND RESET, IF BLOWN.</p> <p>NOTE: Reset P switch with controller in "Coast" position.</p> <p>If this does not correct the trouble, then walk the length of the train and CHECK ALL SIDE TRIPS, WHEELS ON TRACK, CONDUCTOR'S EMERGENCY SWITCHES AND MANUAL CONTACT RETRACTION LEVERS ON TOP OF ELECTRIC COUPLER (at coupled positions, lever must be away from cab). If any defects are found, correct them if possible.</p> <p>When visual inspection is completed, REPORT YOUR FINDINGS AND ANY CORRECTIVE ACTIONS TO THE LINE SUPERVISOR who will decide if additional corrective actions are necessary.</p> <p>If instructed to use the Emergency By-Pass</p> <ul style="list-style-type: none"> ● RESET P5 SWITCH IN HEAD CAB ● DEPRESS AND HOLD EMERGENCY RELAY BY-PASS BUTTON (Releasing button may cause brakes to reapply) ● PROCEED WITH CAUTION (When the emergency relay by-pass button is depressed, overrunning a track trip or opening a Conductor's emergency switch will not stop the train. To obtain emergency braking, move the controller handle to the 4th point of braking) 	<p>PROCEDURE FOR SHOOTING TROUBLE:</p> <ol style="list-style-type: none"> 1. Have Conductor OPERATE DOOR SWITCHES SEVERAL TIMES. If this does not correct trouble 2. CHECK FOR OPEN DOOR <ul style="list-style-type: none"> If door is open <ul style="list-style-type: none"> ● RESET PASSENGER'S EMERGENCY. If this does not close door . . . ● MOVE DOOR CUT-OUT SWITCH TO "CUT-OUT" POSITION (If door remains open, push it closed) ● PROCEED If no door is open, report findings to Line Supervisor and request permission to by-pass power control relay circuit. <p>If permission is given</p> <ul style="list-style-type: none"> ● MOVE FLAG SWITCH (Power Control Relay By-pass Switch) TO BY-PASS POSITION ● OPERATE ON BUZZER SIGNALS <p>NOTE: Green door signal light will remain "off" whenever flag switch is in by-pass position</p> <p>If a door arm is broken</p> <ul style="list-style-type: none"> ● MOVE DOOR CUT-OUT SWITCH TO "CUT-OUT" POSITION ● CLOSE DOOR AND SECURE IT BY ENGAGING DOOR LOCKS ● PROCEED 	<p>PROCEDURE FOR SHOOTING TROUBLE:</p> <ul style="list-style-type: none"> ● MAKE CERTAIN CONTROL SWITCH IS "ON" ● RESET P3 AND P11 SWITCHES IN HEAD CAB <p>NOTE: Reset P switches with controller in "Coast" position</p> <p>If this does not correct trouble, contact Line Supervisor and request permission to by-pass power control circuit. If permission is given</p> <ul style="list-style-type: none"> ● MOVE FLAG SWITCH (Power Control Relay By-pass Switch) TO BY-PASS POSITION ● OPERATE ON BUZZER SIGNALS <p>NOTE: Green door signal light will remain "off" whenever flag switch is in by-pass position</p>	<p>REPORT TROUBLE TO LINE SUPERVISOR AS "P6"</p> <p>PROCEDURE FOR SHOOTING TROUBLE:</p> <ul style="list-style-type: none"> ● RESET P6 SWITCH IN HEAD CAB <p>NOTE: Reset P switch with controller in "Coast" position</p> <p>If P6 blows again, check for a second open controller somewhere in train. If found, close it, then reset P6 switch in head cab and proceed</p>

If train still will not move, see PROCEDURE TO CHANGE CABS

PROCEDURE TO CHANGE CABS

If, after all Trouble Shooting steps are completed, the train still cannot be moved from the head cab, take the following steps after obtaining permission from the Line Supervisor:

ONE UNIT TRAIN

1. Lock up controller in head cab
2. Move back to rear cab (left side of train)
3. Operate train

If train will not operate, see folder PROCEDURE TO COUPLE, "Coupling to a Train with Equipment Trouble."

ALL TRAINS EXCEPT ONE UNIT TRAINS

1. Lock up controller in head cab
2. Move back to next cab on right side of train
3. Open controller and test for response
 - If train responds, operate train from this cab
 - If train does not respond
 - a. Retract contacts in electric coupler by moving manual retraction lever toward cab
 - b. Move Emergency Circuit Interrupter Switch to "Interrupt" position
 - c. Reset P5 switch
 - d. Test for response. If train responds
 - Manually cut-out actuators and Remote Control Cut-Out Switch on all cars of unit being pushed
 - Operate train

If train still does not respond, repeat Steps 2 and 3 above, until you find a cab from which you can operate the train.

If you reach the last cab on the right side of the train and the train still will not operate, trouble is probably in the last unit

1. Retract contacts in electric coupler of last unit by moving manual retraction lever toward cab
2. Move Emergency Circuit Interrupter Switch in rear cab of next-to-last unit to the Interrupt position
3. Manually cut-out actuators and cut-out Remote Control Cut-Out Switch on both cars of last unit
4. Return to head cab, reset P5 switch and attempt to operate

If train will not operate from any cab, see folder PROCEDURE TO COUPLE, "Coupling a Train with Equipment Trouble"