

(5) If no voltmeter is available, a distinct difference in temperature between the grid lines and adjacent clear glass can be detected in 3 to 4 minutes of operation.

Only steps (3) and (4) or (5) above will confirm system operation. Indicator light illumination means that there is power available at the output of the relay only, and does not necessarily verify system operation (see Fig. 2).

If turning the switch ON produces no distinct current draw on the ammeter the problem should be isolated in the following manner:

- (1) Reconfirm that ignition switch is ON.
- (2) Ensure that the heated rear window feed pigtail is connected to the wiring harness and that the ground pigtail is in fact grounded.
- (3) Ensure that the fusible link or circuit breaker is operational.

When the above steps have been completed and the system is still inoperative, one or more of the following is defective:

- (a) Control switch
- (b) Relay
- (c) Rear window grid lines (all grid lines would have to be broken, or the feed pigtail not connected to the bus bar, for no ammeter deflection).

Succeeding paragraphs outline component check-out procedures.

If turning the switch ON produces severe ammeter deflection, the circuit should be closely checked for a shorting condition.

If system operation has been verified but indicator bulb does not light, check and replace bulb.

For detailed wiring information, refer to the "Wiring Diagrams" in Section 8.

Rear Window Grid Lines Test

The horizontal grid lines and vertical bus bar lines printed and baked on inside surface of rear window glass comprise an electrical parallel circuit. The electrically conductive lines are composed of a silver-ceramic material which when baked on glass becomes bonded to the glass and is highly resistant to abrasion. It is possible, however, that a break may exist or occur in an individual grid line resulting in no current flow through the line. To detect breaks in grid lines, the following procedure is required:

- (1) Turn ignition on and turn control switch to ON. The indicator light should come on.
- (2) Using a DC voltmeter with 0-15 volt range, contact vertical bus bar connecting grid lines on passenger side of car (point B of Fig. 2) with negative lead of voltmeter. With positive lead of voltmeter, contact vertical bus bar on driver side of car (point A of Fig. 2). The voltmeter should read 10-14 volts. A lower voltage reading indicates a poor ground connection.
- (3) With negative lead of voltmeter, contact a good

body ground point. The voltage reading should not change.

(4) Connect negative lead of voltmeter to Point B on passenger side bus bar and touch each grid line at Mid-Point with positive lead. A reading of approximately 6 volts indicates a line is good. A reading of 0 volts indicates a break in line between Mid-Point C and Point A. A reading of 10-14 volts indicates a break between Mid-Point C and ground Point B. Move toward break and voltage will change as soon as break is crossed.

If the system checks out as outlined above, but system performance is still not satisfactory, the resistance of the backlight grid should be checked with a suitable ohmmeter and compared to the following range table:

(Values Are in Fractions Of Ohms)

RW-21,22,23	PD-43	PD-41	PDC-45,46
.37-.49	.32-.40	.32-.40	.44-.56
C-41	C-42,43	HN-41	HN-45
.37-.49	.29-.37	.42-.54	.42-.54
RW-5,46	HN-29	RW-41	
.79-1.01	.42-.54	.39-.51	

Relay Testing (All Carlines)

Relays may be tested in-car or bench checked. In-car testing is accomplished in the following manner:

- (1) Dismount relay. (Relay location in instrument panel can be found in Section 8.)
- (2) Ground relay case to a good body ground point.
- (3) Turn ignition ON.
- (4) Using a DC voltmeter, with 0-15 range, check voltage at relay terminals B, Y, L and P (See Figs. 1 & 2). Terminals B and Y should confirm a voltage of 10 to 14 volts to ground. Terminals L and P should confirm 0 voltage to ground. When terminals B or Y show no voltage trace circuit upstream of relay for problem (wiring cut, fusible link or circuit breaker inoperative, bulkhead connector not operative, etc.) If terminal P indicates voltage, turn ignition switch OFF and ON and re-check. If voltage at P is still indicated, the control switch and/or relay are defective and should be replaced. If terminal L indicates voltage the relay is defective and should be replaced.

(5) If relay checks out to this point, momentarily short terminals B and P, relay should latch and stay on for 8-1/2 to 11-1/2 minutes in the case of timer relays and indefinitely for continuous relays. Terminal L should also confirm voltage. If relay fails to latch or voltage at terminal L is not confirmed, the relay is defective and should be replaced.

Bench checking of the relay may be accomplished in the following manner:

- (1) Remove relay.
- (2) Ground relay case and connect a jumper wire between terminals B and Y (see Figs. 1 & 2). Connect a 12 volt test light between L and ground. (A 0-15