

Figure 5. Installation of the branched wiring harness, item 109

Wire No.	Connect to	Connect to
303BX18	I61B, pin 1	
3011AI18	I61B, pin 2,	
20ADV18	I61B, pin 3	
4037A18	S4A, deck 7, terminal H	S30A, deck 48, terminal H
4038A18	S4A, deck 7, terminal A	E30V-244
19BQ18	S30A, deck 43, terminal D	E30V-269
15BV18	S30A, deck 44, terminal D	E30W-300
Shield		E30W-299
4033B18	S30A, deck 44 terminal C	E30R-142
Shield		E30R-141
4034B18	S30A, deck 44, terminal B	E30R-143
Shield		E30R-141
4035B18	S30A, deck 44, terminal A	E30P-89
Shield		E30P-75
4036A18	S30A, deck 44, terminal H	E30T-210
Shield		E30T-209
4032A18	S30A, deck 45, terminal D	E30Q-109
4030B18	S30A, deck 45, terminal C	E30Q-111
4031B18	S30A, deck 45, terminal B	E30S-180
4029B18	S30A, deck 45, terminal A	E30Q-110
14CB18	S30A, deck 45, terminal H	E30Q-92
172HA18	E30W-299	E30T-209
172GZ18	E30T-209	E30R-141
2909F18		E30V-256
303BT18		E30V-257
20ADZ18		E30R-149
4026B18		E30Q-97
3011AE18		E30Q-119
4025B18		E30P-61
4024B18		E30N-59

(22) Install wire 3011AJ18, item 104, as follows:

- (a) Gain access to P103B. Equip the plain end of wire 3011AJ18 with insulation sleeving, item 83, and solder it to pin Z of P103B. Insulate the solder connection with the insulation sleeving.
- (b) Route wire 3011AJ18 along cable assembly 8525059 and connect the terminal lug end to terminal board E30Q-119. Secure the wire to the cable assembly with insulation tape, item 84.

(23) Secure cable assembly 8525173 to the panel (1), using the loop clamp, item 114, one roundhead screw 155198, and one hexagon nut MS20365-1032 retained in b(20) above.

(24) Secure cable assembly 8525173 to the control-indicator cabinet using the loop clamps and hexagon nuts retained in b(20) above.

(25) Reidentify the cable assemblies and wiring harnesses listed in the table below by removing the existing identification sleeves and replacing them with the designated insulation or cable marker sleeves. Secure the sleeves to the wiring harnesses using insulation tape, item 84.

Cable assembly	Wiring harness	Equip with	Reidentified to
8525059		Sleeving, item 93	9978249
8167963		Sleeving, item 58	9978096
	9032624	Sleeving, item 59	9978251
8525029		Sleeving, item 73	9978245
	9032622	Sleeving, item 91	9978235
8167994		Sleeving, item 92	9978248
8167731		Sleeving, item 74	9978246
8525173	9978230	Sleeving, item 94	9978250

(26) Disconnect wire 2769N18 from relay K2BW, terminal 2, and terminal board E32A, terminal 53, on relay panel 9032245, retained in b(2) above. Remove and discard the wire from the wire bundle.

Note. Insulate the solder connections to the relay and connector terminals in the following table using insulation sleeving, item 83.

- (27) Install or relocate and reidentify the wires listed in the following table as

Wire No.	Connect to	Disconnect from	Equip with	Connect to	Reidentified to
2919G18, item 103	K9AC-17			E32B-133	
4028A18, item 106	K9BF-17			K9AC-16	
3011AK18, item 105	J103B-Z			K9BF-16	
Jumper wire	E32B-133			E32B-161	
35BU20		E32A-33	Sleeving, item 81	E32A-14	103BG20
133DD20		K2E-13	Sleeving, item 82	E32A-43	144BD20
103BH20, item 107	E32A-14			E32A-68	
144BE20, item 108	E32A-43			K9BP-19	
156BA20		K9BP-9		E32B-119	
3048A14		K9BP-8		E32B-134	
14BC18		K9BP-7		E32B-147	
2858B18		K2BW-3		E32A-53	
156BD18, item 102	E32B-119			K2BW-3	
3048B14, item 100	E32B-134			K2BW-2	
14CC18, item 101	E32B-147			K2BW-1	
11HE18		E32A-24	Sleeving, item 80	S48A-7	20AFV18

- (28) Reidentify the wires listed in the following table by removing the existing identification sleeves and replacing them with the designated insulation sleeves. Secure the insulation sleeves to the wires using insulation tape, item 84.

Wire No.	Location	Equip with	Reidentified to
35BU20	K2BW-12	Sleeving, item 78	103BG20
133DD20	K2BW-13	Sleeving, item 79	144BD20
11HE18	T7A	Sleeving, item 77	20AFV18

Caution: A heat sink should be used when soldering the diode, item 90, to the terminal board (a pair of needle nose pliers may be used).

- (29) Solder the diode, item 90, between terminals E32A-43 and E32A-14 with the arrow on the diode pointing towards E32A-43.
- (30) Reidentify the wiring harnesses located on relay panel 9032245 and list-

indicated. Secure the insulation sleeves to the wires using the insulation tape, item 84.

Note. Fabricate the jumper wire in the table below from a 1-inch piece of discarded wire.

ed in the table below by removing the existing identification sleeves and replacing them with the designated cable marker sleeves. Secure the cable marker sleeves to the wiring harnesses using insulation tape, item 84.

Wiring Harness	Equip with	Reidentified to
8530802	Sleeving, item 96	9978667
9025645	Sleeving, item 75	9978247
9025646	Sleeving, item 95	9978666
9978042	Sleeving, item 97	9978668

- (31) Perform the following resistance checks on the modified control-indicator using multimeter TS-352/U. Position the launcher control-indicator panel switches in the OFF, LAUNCHER, TEST, or normal position before beginning the checkout procedure.

Note. Continuity means less than one ohm; discontinuity means infinity.

Step	From	To	Remarks	Indication
1			Check for continuity from the shield of each of the wires listed below (located on S80A, deck 44) to a ground stud	
	15BV18	Gnd		Continuity
	4033B18	Gnd		Continuity
	4034B18	Gnd		Continuity
	4035B18	Gnd		Continuity
	4036A18	Gnd		Continuity
2			Check for continuity to ground stud	
	E30W-299	Gnd		Continuity
	E30T-209	Gnd		Continuity
3			Check for continuity between the points designated below	
	J5A-20	P87A-A		Continuity
	J5A-21	I61B-1		Continuity
	J5A-21	I61C-1		Continuity
	J5A-21	I61D-1		Continuity
	J5A-21	I61E-1		Continuity
	J81B-X	I61B-3		Continuity
	J81B-X	I61C-3		Continuity
	J81B-X	I61D-3		Continuity
	J81B-X	I61E-3		Continuity
	P103B-Z	I61B-2		Continuity
	J70C-24	I61C-2		Continuity
	J70B-24	I61D-2		Continuity
	J70A-24	I61E-2		Continuity
4			Remove the lamps from indicators I61C, I61D, and I61E on the control-indicator panel	
	J70A-24	J70B-24		Discontinuity
	J70A-24	J70C-24		Discontinuity
			Replace the lamps in indicators I61C, I61D, and I61E on the control-indicator panel	

Note. Determine the polarity of the ohmmeter with a voltmeter to ascertain which is the negative and which is the positive lead. Mark the positive lead with masking tape or similar material for identification.

Step	Positive from	Negative to	Remarks	Indication
5				
	J70C-24	JA5-15		Less than 40 ohms
	J70B-24	JA5-15		Less than 40 ohms
	J70A-24	JA5-15		Less than 40 ohms
	J69D-r	JA5-15		Less than 40 ohms
	J5A-15	J69D-r		Discontinuity
	J5A-15	J70A-24		Discontinuity
	J5A-15	J70B-24		Discontinuity
	J5A-15	J70C-24		Discontinuity
6			Position the test station selector switch on TEST STATION #1	
	J81B-e	P103B-G		Discontinuity
	J70A-18	P103B-G		Continuity
	J70A-19	J5A-17		Continuity
	J70A-34	P103D-J		Discontinuity

Step	From	To	Remarks	Indication
7			Position the test station selector switch to TEST STATION #2	
	J70B-18	P103B-G		Continuity
	J70B-34	P103D-J		Discontinuity
	J70B-19	J5A-17		Continuity
8			Position the test station selector switch to TEST STATION #3	
	J70C-19	J5A-17		Continuity
	J70C-34	P103D-J		Discontinuity
	J70C-18	J81B-e		Discontinuity
	J70C-18	J70A-18		Discontinuity
	J70C-18	P103B-G		Continuity
9			Position the test station selector switch to LAUNCHER	
	J81B-Y	P103D-J		Continuity
	J81B-m	J5A-19		Discontinuity
10			Position the TEST-FIRE switch to FIRE	
	J81B-m	J5A-19		Continuity
11			Position the TEST-FIRE switch to TEST	
	J70A-19	J70B-19		Discontinuity
	J70A-19	J70C-19		Discontinuity
	P103B-G	J69A-k		Continuity
	P103B-G	J87B-e		Continuity
	J5A-17	J81B-f		Continuity
12			Position the LAUNCHER DC POWER switch to ON	
	P103D-d	J81B-X		Continuity
13			Position the LAUNCHER DC POWER switch to OFF	
	J69A-y	J69D-r		Discontinuity
	J69A-y	J88A-C		Discontinuity
14			Perform the following checks on relay panel 9032245	
	J103B-A	J103B-F		Discontinuity
	J103B-G	J103D-R		Continuity
	J103B-G	K2BW-1		Continuity
	J103B-Z	J103B-m		Continuity
	J103D-A	K2BW-13		Discontinuity
	J103E-H	T7A-3		Continuity
	J103E-s	J103D-R		Discontinuity
	J103F-F	K2BW-3		Continuity
	E32A-14	E32A-68		Continuity
15	Positive to	Negative to		Indication
	J103B-F	J103F-G		Less than 40 ohms
	J103F-G	J103B-F		75 to 125 ohms

(32) Reidentify the panel assemblies listed in the following table, using stamping kit 7520-264-3718. Line out the existing markings and cover coat the new markings.

Panel assembly	Part No.	Reidentified
Launcher control-indicator panel	9032157	9978254
Relay panel	9032245	9978301

- (33) Impression stamp the serial number on the existing identification plate 9032672, located on the top of control-indicator 9032238, into the identification plate, item 87, using the metal stamping dies, components of tool kit 5180-092-9079.

Caution: Use extreme care while drilling out the rivets in the following operation to prevent damage to the hole pattern and any wires or components directly beneath the working area.

- (34) Drill out the four rivets that secure identification plate 9032672 to the control-indicator cabinet using a No. 41 drill bit. Discard identification plate 9032672.
- (35) Install the identification plate, item 87, on the control-indicator cabinet, in the location formerly occupied by the discarded identification plate, using four metal tapping screws, item 88. Apply sealing compound 8518468 to the threads of the screws before installation.

Note. The new identification plate reidentifies the modified control-indicator as follows: Control-indicator C-2699/TSW (9978253), for future reference.

- (36) Secure the added wires and wiring harnesses, as required, to existing wiring harnesses with insulation tape, item 84.

Note. Perform steps (37) through (40) below in accordance with TM 9-1440-253-35.

- (37) Install relay panel 9978301.
- (38) Install launcher control-indicator panel 9978254.
- (39) Install the two terminal access covers and close the relay compartment door with the 16 captive fasteners.
- (40) Close and fasten panel cover 9032144.
- (41) Return modified control-indicator C-2699/TSW to the launching area and connect all cables.

c. Modify ORD 8 spare launcher section operating panel 8525396 using modification kit 1440-858-5776 as outlined below.

Note. Insulation tape required for string ties is available in supply channels.

- (1) Disconnect the three attached wires and remove switch S10C. Discard: toggle switch MS35058-28, packing with retainer 8528861, and flat washer 8164091. Retain the switch guard.
- (2) Remove and discard wires 405E22 and 407F22, and relocate wire 407E22 in accordance with 10b(6), (7), and (8) above. Install the switch guard retained in c(1) above, in accordance with a(9) above.
- (3) Loosen the loop clamps that secure cable assemblies 9030184 and 8525736 to the panel.

Caution: Before any drilling or cutting is done, protect all the wires and components in the immediate area from chips and drill damage.

- (4) Cut four 5/8-inch holes in the panel, and identify the holes in accordance with figure 1 and a(11) and (12) above. Install the identification plate, item 1, on the front of the panel in accordance with a(13) above.
- (5) Install the four indicator lights, components of the branched wiring harness, item 56, in accordance with a(15) above.
- (6) Connect the wires of the branched wiring harness, item 56, as outlined in the table below. Route the wiring harness along cable assembly 9030184 in accordance with figure 6. Secure the wiring harness to the cable assembly with insulation tape.

Wire No.	Connect to
407BB22	S43A, deck 2, terminal 12
405BB22	S43A, deck 4, terminal 6
20AET18	S43A, deck 6, terminal 12
303BK20	I7A common to 303R22

Note. If wire 213D22 is already connected between terminals D and E on switch S44A, do not perform step c(7) below.

- (7) Connect wire 213D22, item 10, to switch S44A between terminals D and E on deck 17.
- (8) Connect the wires listed in the table below as indicated and route them along cable assembly 8525736 in accordance with figure 8. Secure the

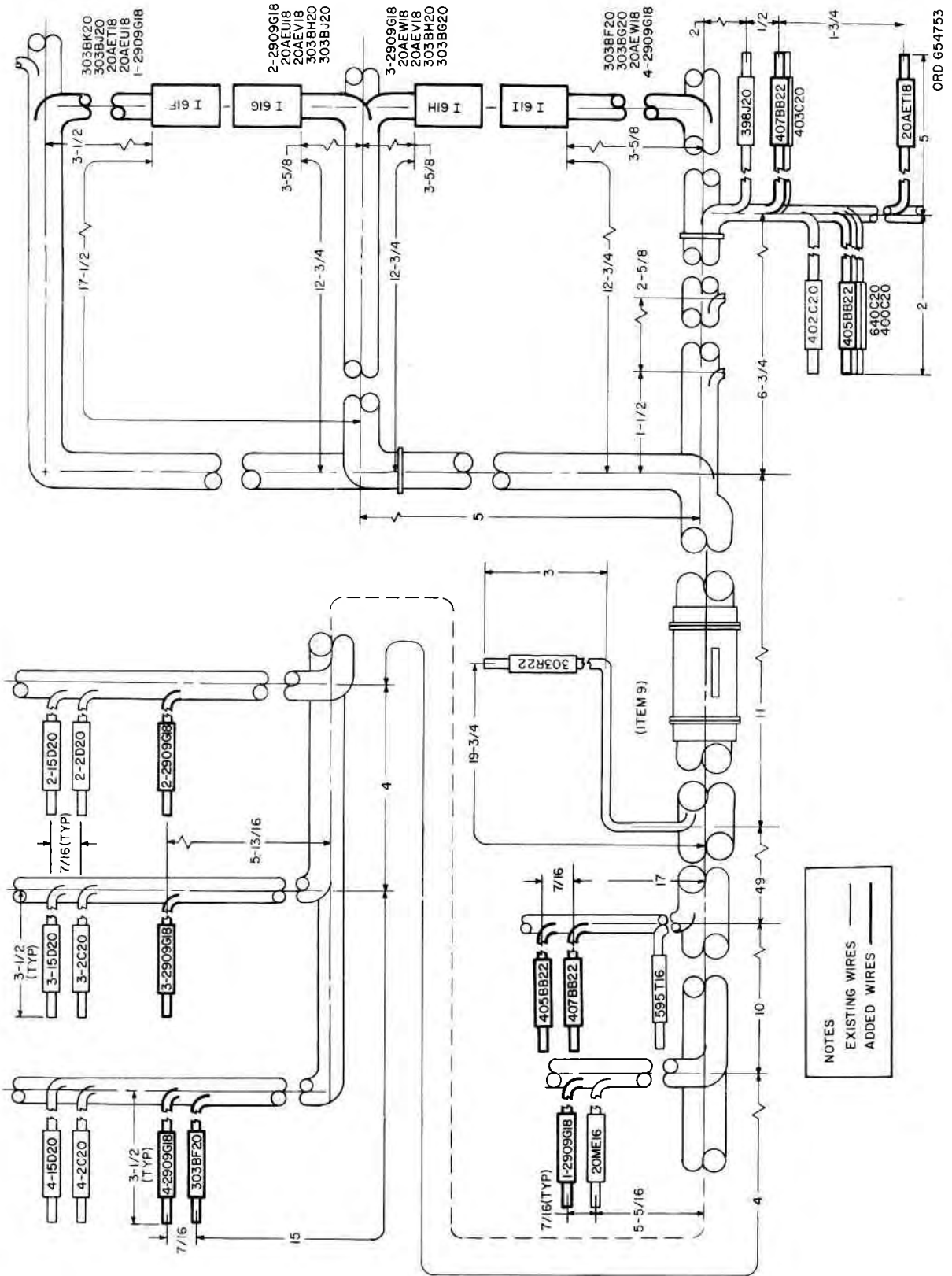


Figure 6. Modification of cable assembly 9030184 to branched wiring harness 9978288—partial view.

wires to the wire bundle with insulation tape.

Note. If there are no screws and washers on the unused terminals of the rotary switch, obtain others of the same size.

Wire No.	Terminal lug to
4068E18, item 45	S44A, deck 24, terminal D
4068F18, item 46	S44A, deck 24, terminal C
4068G18, item 47	S44A, deck 24, terminal B
4068H18, item 48	S44A, deck 24, terminal A
4069A18, item 49	S44A, deck 24, terminal H

- (9) Reidentify both ends of wire 220C20 (switch S44A, deck 12, terminal H) to 225BA20 by removing the existing identification sleeves and replacing them with the insulation sleeves, item 10. Secure the insulation sleeves to the wire with insulation tape.

Switch	Position	From wire end	To wire end	Indication
S44A	NONE	213C22	168E22	Continuity
	NONE	213C22	217E22	Continuity
	NONE	213C22	203E22	Continuity
	LAUNCHER #1	4069A18	4068E18	Continuity
	LAUNCHER #2	4069A18	4068F18	Continuity
S43A	LAUNCHER #3	4069A18	4068G18	Continuity
	LAUNCHER #4	4069A18	4068H18	Continuity
	RED	405BB22	375C20	Continuity
	RED	407BB22	375C20	Continuity
S10B	FIRE	20ME16	365C20	Continuity
	OFF	20ME16	365C20	Discontinuity
		20ME16	I61I-3	Continuity
		303N20	303BF20	Continuity

d. Modify ORD 8 spare relay assembly 8166534 using modification kit 1440-858-5824 as outlined below.

Note. If spare relays K9AZ-4 are still present on relay assembly 8166534, relay K9AZ-2 must be removed and discarded at this time.

- (1) Install the interval timer (I20A), item 31, in accordance with a(31) above.

Note 1. Insulation tape required for string ties is available in supply channels.

Note 2. Insulate the solder connections to the relay and connector terminals with insulation sleeving available in supply channels.

- (2) Connect the individual wires, items 50 through 54, between I20A, E29A, and J65B in accordance with a(32) above.

- (10) Reidentify cable assemblies 9030184 and 8525736, and wiring harness 9978283 in accordance with a(19) above.
- (11) Tighten the cable clamps that were loosened in c(3) above.
- (12) Reidentify panel assemblies 8525396 and 8165774 in accordance with a(39) above.
- (13) Perform the following resistance checks on the modified launcher section operating panel 8525396 using multimeter TS-352/U, 6625-242-5023. Position the panel switches in the OFF, NONE, AUTO, or normal positions before beginning the check-out below.

Note. Continuity means less than one ohm; discontinuity means infinity.

- (3) Reidentify wiring harness 8166673 to 9978095 by removing the existing identification sleeve and replacing it with the insulation sleeve, item 20. Secure the insulation sleeving to the wiring harness with insulation tape.
- (4) Reidentify spare relay panel 8166534 to 9978278, using stamping kit 7520-264-3718. Line out the existing markings and cover coat the new markings.
- (5) Perform the following resistance checks on the modified spare relay panel using multimeter TS-352/U, 6625-242-5023.

Note: Continuity means less than one ohm.

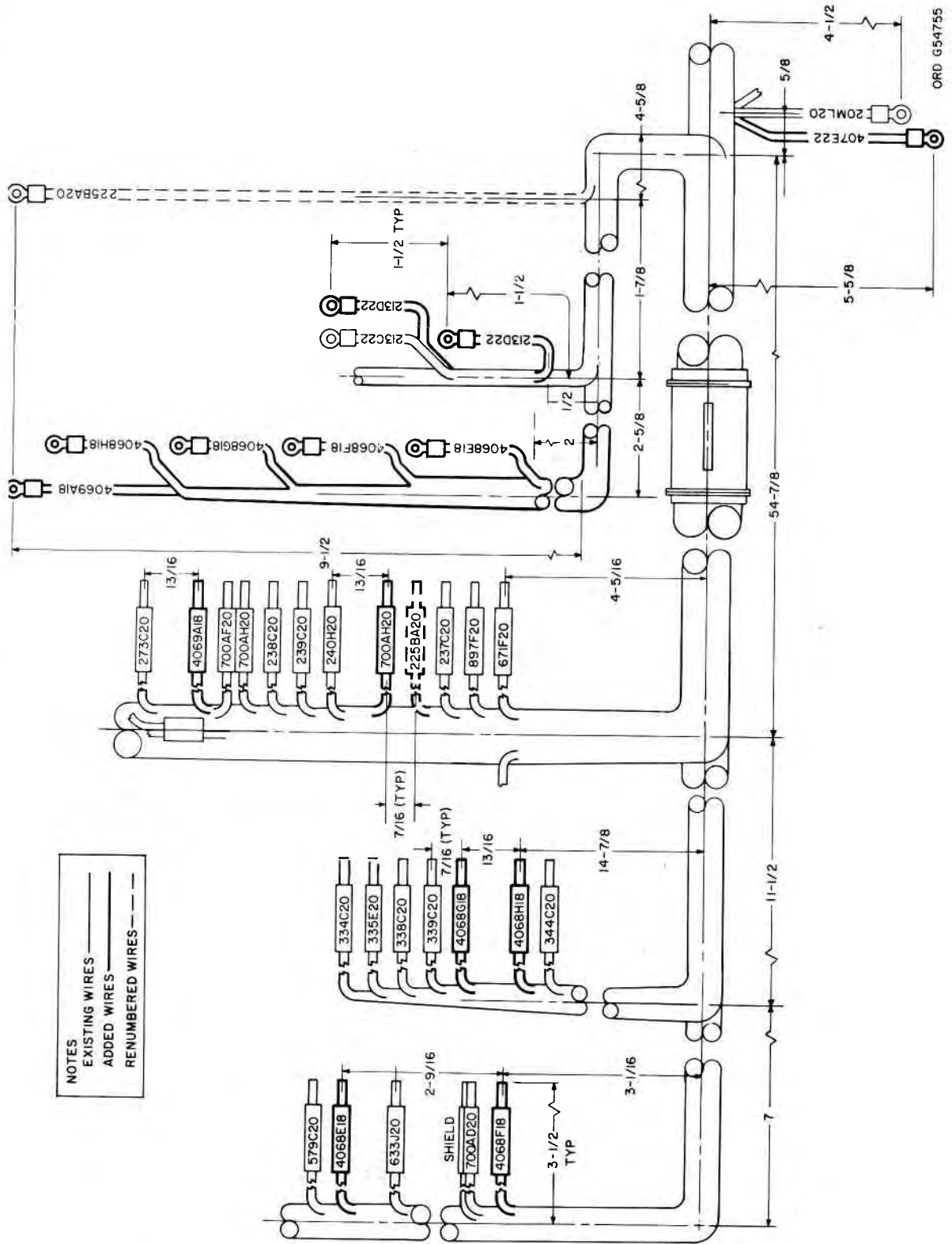


Figure 7. Modification of wiring harness 8525736 to branched wiring harness 9978093—partial view.

From	To	Indication
J65B-A	I20A-4	Continuity
J65B-B	I20A-6	Continuity
J65B-B	I20A-1	Continuity
J65B-C	I20A-2	Continuity

e. Modify ORD 8 spare wiring harness 8165879 using modification kit 1440-858-5818 as outlined below.

Note. Insulation tape required for string ties is available in supply channels.

- (1) Position the crab-lok tip end of the three wires that form the branched wiring harness, item 55, as described in (a) through (b) below.
 - (a) Position wire 36EY22 adjacent to wire 4-2649B20 and secure it to the wiring branch allowing 3-1/2-inches to remain extended.
 - (b) Position wires 405BC22 and 407BC22 adjacent to wire 20LR16 and secure them to the wiring branch allowing 5-1/4-inches and 5-11/16-inches respectively to remain extended. Secure wire 407BC22 to wire 405BC22 at a point 1-3/4-inches below the last string tie that presently secures wire 20LR16 to the wire branch.
- (2) Route the three wires along the wiring harness to connector P65B and secure them as necessary with insulation tape.
- (3) Trim the wires 36EY22, 407BC22, and 405BC22 to proper length and equip the ends with insulation sleeving.
- (4) Gain access to connector P65B and solder the three wires in accordance with the table below. Insulate the solder connections with insulation sleeving.

Wire No.	Connect to
405BC22	P65B-A
407BC22	P65B-B
36EY22	P65B-C

- (5) Reidentify branched wiring harness 8165879 and the branched wiring harness, item 55, to branched wiring harness 9978094 by removing the existing identification sleeves and replacing

them with insulation sleeving, item 21. Secure the insulation sleeving to the wiring harness with insulation tape.

f. Modify ORD 8 spare cable assembly 8525390 using modification kit 1440-858-5822 as outlined below.

Note. Insulation tape required for string ties is available in supply channels.

- (1) Reidentify the wires listed in the table below by removing the existing identification sleeves and replacing them with the designated insulation sleeves. Secure the insulation sleeves to the wires with insulation tape.

Wire No.	Equip with	Reidentified to
173L18	Sleeving, item 13	303BN18
1-17B14	Sleeving, item 16	1-2909H14

- (2) Reidentify cable assembly 8525390 to branched wiring harness 9978284 by removing the existing identification sleeve and replacing it with the insulation sleeving, item 7. Secure the insulation sleeve to the wiring harness with insulation tape.

g. Modify ORD 8 spare cable assembly 8525391 using modification kit 1440-858-5821 as outlined below.

Note. Insulation tape required for string ties is available in supply channels.

- (1) Reidentify the wires listed in the table below by removing the existing identification sleeves and replacing them with the designated insulation sleeves. Secure the insulation sleeves to the wires with insulation tape.

Wire No.	Equip with	Reidentified to
173K18	Sleeving, item 15	303BS18
2-17B14	Sleeving, item 17	2-2909H14

- (2) Reidentify cable assembly 8525391 to branched wiring harness 9978286 by removing the existing identification sleeve and replacing it with the insulation sleeving, item 8. Secure the insulation sleeve to the wiring harness with insulation tape.