

*REPLACING PAGE ADDENDUM
Filing Instructions:*

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
2. INSERT THE ATTACHED PAGES INTO THE SECTION IN THEIR PLACE.
3. PLACE THIS PINK SHEET AHEAD OF PAGE ONE OF THE SECTION.

**NO. 400 DATA PACKAGE
METHODS OF CONNECTING – INTERCONNECTING – INTERNAL WIRING**

1. GENERAL

1.001 This addendum supplements Section 580-000-953PT, Issue A.

Note: The attached pages must be inserted in the section in accordance with the above instructions.

1.002 It is issued to:

- Change station limit features of the multiple address circuit.
- Revise traffic usage connections.

6. MULTIPLE ADDRESS CIRCUIT

The following changes apply to Part 6 of the section:

- (a) 6.02 and 6.03 — revised
- (b) 6.04 — added

9. TRAFFIC USAGE REGISTERS CONNECTIONS

The following changes apply to Part 9 of the section:

- (a) 9.01 and Fig. 13 — revised

Attached:

Page 13 dated March 1972, reissued
Pages 14, 15, 16, and 17 dated March 1972, revised
Page 18 dated March 1972, reissued

Assigned 80 of 90 Tens Digit

5.03 The 80 and 90 tens groups are not true tens groups. They have no equipment associated with them, and when dialed, they use the marker routing, crossbar switches and line units of the tens group they are strapped to. Figure 10, Note 4 shows an example of the tens group 90-99 strapped to where the 20-29 group is normally strapped.

Assigned Single Digit 8 or 9

5.04 The information in Paragraph 5.03 applies to the single digit 8 or 9 except when dialing you dial only one digit and can be connected to the station within the strapped tens group that ends with zero. If more stations within the tens group are desired, it may be accomplished by forming a hunt group including units number zero. See Figure 10, Note 5, for an example of single digit strapping.

In this example, if you dialed 8, you would use marker routing, X-bar switch and the line unit for station 50.

- (1) Use the table shown in Figure 10B and place or remove assigned or unassigned straps to the right of "digits dialed". 8 or 9 as applicable.

Unassigned Tens Groups

5.05 If a tens group is not equipped, it is considered to be unassigned (see Figure 10, example 1) and requires strapping as follows:

- (1) Use Figures 10A and 10B to place or remove strapping for all unassigned tens groups.

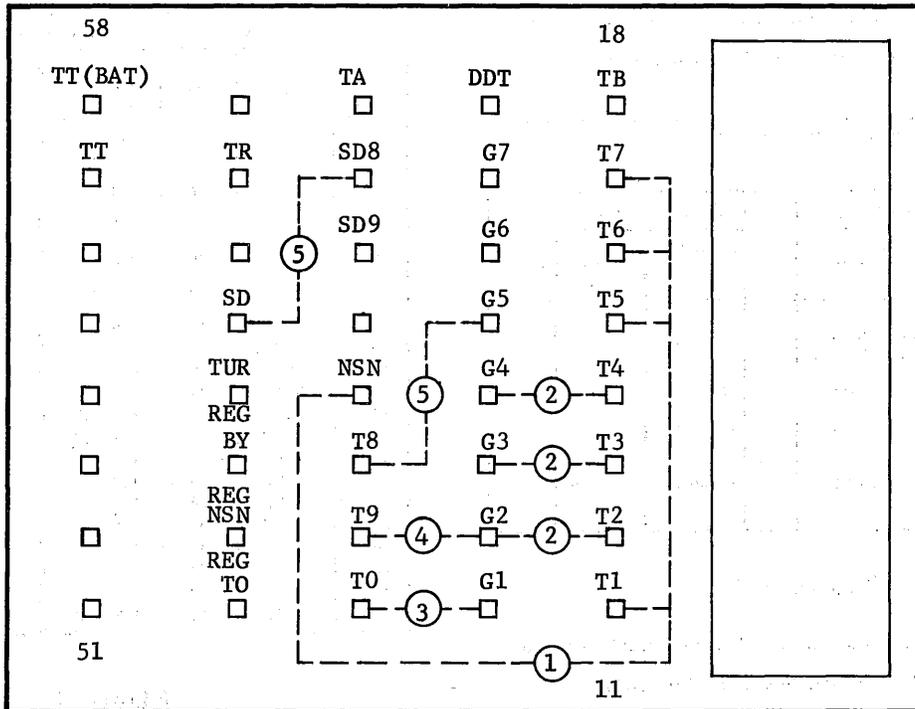


Figure 10

TS (A)

EXAMPLE

- 1. Unassigned tens groups 10, 50, 60 and 70.
- 2. Assigned tens groups 20, 30 and 40.
- 3. Tens group 0 (required at all times).
- 4. Using tens 9 (2 digit) into the 20's group.
- 5. Using tens 8 (1 digit) into the 50's group.

FIG. 10 TYPICAL STRAPPING

FOR THE REGISTERS

NOTE: Terminal strips are not stenciled.

REGISTERS TENS GROUPS STRAPPING					
Tens Group DESIG	Assigned Straps		Unassigned Straps		See Note
	Registers TA-A		Registers TS-A		
	DESIGS	PCHGS	DESIGS	PCHGS	
00-05	T0-G1	31-21			1-2
10-19			T1-NSN	11-34	
20-29	T2-G2	12-22	T2-NSN	12-34	
30-39	T3-G3	13-23	T3-NSN	13-34	
40-49	T4-G4	14-24	T4-NSN	14-34	
50-59	T5-G5	15-25	T5-NSN	15-34	
60-69	T6-G6	16-26	T6-NSN	16-34	
70-79	T7-G7	17-27	T7-NSN	17-34	

Figure 10A

NOTE 1: All TO-9 punchings require assigned or unassigned straps

NOTE 2: Registers TS-A located left side of registers

REGISTER STRAPPING - SINGLE OR TWO DIGIT						
TENS GROUPS 8 or 9						
DIGITS DIALED		Assigned Straps		Unassigned Straps		See Note
		Registers TS-A		Registers TS-A		
Single	Two	DESIGS	PCHGS	DESIGS	PCHGS	
8		T9-G2-7 SD-SD8	33-22-27 45-37	T8-NSN	33-34	1-2-3
	80-89	T8-G2-7	33-22-27	T8-NSN	33-34	
9		T9-G2-7 SD-SD9	32-22-27 45-36	T9-NSN	32-34	
	90-99	T8-G2-7	32-22-27	T9-NSN	32-34	

Figure 10B

NOTE 1: All TO-9 punchings require assigned or unassigned straps.

NOTE 2: Registers TS-A located left side of registers.

NOTE 3: Tens groups 8 or 9 will be strapped into tens groups 20-29, 30-39, 40-49, 50-59, 60-69 or 70-79 as desired, as they have no equipment components of their own.

6. MULTIPLE ADDRESS CIRCUIT

6.01 The Multiple Address amplifier (M.A.) is terminated either by line circuits, or by terminating resistors, or by combinations of both. Relay logic is provided so that an

unchanging terminating impedance is presented to this amplifier regardless of the number of stations connected to the bridge. This impedance is equal to that presented by 60 line circuits. Since a Data Package may not be equipped with 60 line circuits, it will be necessary to place strapping options which will compensate for those unequipped line circuits as shown in Figure 11A.

6.02 The station limit feature (option Q) of the MA circuit limits the number stations that may be connected on each MA call (refer to PSD-2G030-01, CAD 3). The limit may be provided for a minimum of two or a maximum of 41 stations. Wiring options T, U, V, W, X, Y, and Z (see Fig. 11 and refer to PSD-2G037-01, Note 1.02) in conjunction with option Q, provide for any specific number of stations within these limits.

STATION LIMIT ON M.A. BRIDGE CONN.												
Stas on Brdg	Req. Option	Stas on Brdg	Req. Option	OPTION WIRING								
				Opn	M.A. Resistors							
					H	A	C	D	E	F	G	
2	-	22	V,X	T	B	T						
3	Z	23	V,X,Z	V	B		B					
4	Y	24	V,X,Y	W	B			B				
5	Z,Y	25	V,X,Y,Z	X	B				C			
6	X	26	V,W	Y	B						B	
7	X,Z	27	V,W,Z	Z	B							B
8	X,Y	28	V,W,Y									
9	X,Y,Z	29	V,W,Y,Z									
10	W	30	V,W,X									
11	W,Z	31	Y,W,X,Z									
12	W,Y	32	Y,W,X,Y									
13	W,Y,Z	33	V,W,X,Y,Z									
14	W,X	34	T									
15	W,X,Z	35	T,Z									
16	W,X,Y	36	T,Y									
17	W,X,Y,Z	37	T,Y,Z									
18	V	38	T,X									
19	V,Z	39	T,X,Z									
20	V,Y	40	T,X,Y									
21	V,Y,Z	41	T,X,Y,Z									

Figure 11

NOTES:

1. If more than 41 stations are to be allowed insert 258 plug in the T.A. test jack.
2. To use this table - select the amount of stations to be allowed on each connection, note the required options - wire resistors as shown under option wiring (B denotes bottom and C center of card type resistors).

MA BRIDGE BUILD-OUT					
Switcher EQ with live units for	REQ Option	OPTION WIRING			See Note
		MA REPT Coil	M RES	N RES	
10 STA	RS	4	T-B		1
20 STA	RS	4	T	T	1
30 STA	S	4	T		1
40 STA	P	4	B		1
50 STA	R	4		T	1
60 STA	-	-	-	-	1

Figure 11A

NOTE 1: When changing option remove options not required.

NOTE 2: To use this Table - use column 1 and 2 from the right to select the required options - wire options as shown under option wiring (T denotes top and B bottom of card type resistors).

6.03 If the station limit feature is not used, option Q should not be provided. This will avoid inadvertent register release through accidental operation of the TA relay.

6.04 When a station is called and transfers to the MA bridge, awaiting the transmission of a message, a restraint signal is normally sent every four seconds (causing the station restraint lamp to flash) to alert the station that an MA call is being established. Option M, applied, disables this restraint signal. Option L, applied, causes a rubout character to be sent every four seconds.

7. TEST PORT OPTIONS AND CONNECTIONS

7.01 The No. 400 Data Package contains three test ports. These are the tone port, the testboard port, and the quiet port.

7.02 By placing the required option, the quiet port can be used for a quiet termination (Z option) or as a loop around port (Y option). This option will connect the transmit to the receive side of the test port Q equalizer, thereby providing ac continuity between the transmit and receive sides of the line to be tested. Figure 11B.

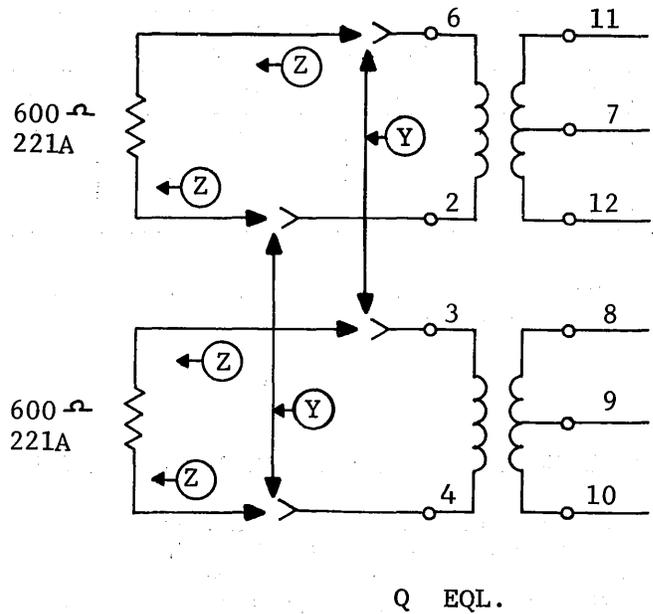


Figure 11B

NOTE 1: Z-Option, Quiet Termination

NOTE 2: Y-Option, Loop Around

NOTE 3: Q EQL. is mounted on MTG row 21, Slide 1 of the List 1 cabinet

7.03 The No. 400 Data Package is equipped with a test line which is to be a connection to a test center or toll testboard to provide a means of testing No. 400 Data Packages and its stations. It is equipped to be a 4-wire DX out of the switcher. To connect, proceed as follows:

(a) Use table in Figure 12 to connect transmit and receive pairs.

TEST BOARD TEST PORT CONN					
PAIR DESIG	CONNECTION				See Note
	LEAD	M-BLK PCHG		AMPL CA	
REC	T1	1		26 W-BL	1
	RI	2		1 BL-W	
TRAN	T	3		27 W-O	
	R	4		2 O-W	

Figure 12

NOTE 1: Connection can be made on M block or on cable M at the house feeder terminal.

NOTE 2: Complete option shown in Figure 5.

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INTERRUPTED OR CONTINUOUS GENERATOR SUPPLY OPTIONS			
OPTION	TS	PCHGS	See Note
X	9	10	1
Y	8	10	1

NOTE 1: The TS is located on MTG row 26, slide 2 of the list 1 cabinet.

Figure 12A

8. POWER AND RINGING SUPPLY OPTIONS

8.01 The No. 400 Data Package must be arranged to provide either interrupted (option X) or continuous (option Y) ringing. Option Y is normally installed at the factory. Figure 12A for wiring options.

9. TRAFFIC USAGE REGISTER CONNECTIONS

9.01 The No. 400 Data Package is equipped with leads to which external traffic registers may be connected as required. The

table in Fig. 13 shows lead designations, description of functions to be counted, and connections for the individual leads. Either a steady or a momentary ground is applied to the individual lead. The duration of a momentary ground is sufficient to operate a 14-type register.

10. ADDING LINE UNIT GROUPS

10.01 The No. 400 Data Package at initial installation, will be equipped with only the line units (in increments of 10) required at the time. Future growth will require mounting, plugging in, wiring, and option changes to install new tens groups of line units. Figure 14 shows the steps required to install a new tens group of line units.

LEAD DESIG	DESIGNATION MEANING	FUNCTION MEASURED	TS (M)		
			PCHG	CABLE COLOR	CONN PIN
RBOP	REGISTER BUSY OVERFLOW	PROVIDES A GROUND ON THE RBOP LEAD WHEN A REQUEST FOR AN ORIGINATING REGISTER IS RECEIVED AND BOTH REGISTERS ARE BUSY; THIS GROUND CONDITION REMAINS FOR THE PERIOD OF TIME BOTH REGISTERS REMAIN BUSY.	28	BR-BK	14
MCPC	MARKER COMPLETION	PROVIDES A MOMENTARY GROUND ON THE MCPC LEAD EACH TIME A MARKER ACTION IS COMPLETED.	27	BK-BR	39
RTP1 RTP0	RETRY REGISTER 1 PEG RETRY REGISTER 0 PEG	PROVIDES A MOMENTARY GROUND ON THE RTP - LEAD EACH TIME THE RETRY REGISTER IS USED.	26 25	G-BK BK-G	13 38
RTTT RTTO	RETRY REGISTER 1 TIMEOUT RETRY REGISTER 2 TIMEOUT	PROVIDES A MOMENTARY GROUND ON THE RTT - LEAD EACH TIME A RETRY REGISTER TIMEOUT OCCURS.	24 23	O-BK BK-O	12 37
RTBO	RETRY REGISTER BUSY OVERFLOW	PROVIDES A MOMENTARY GROUND ON THE RTBO LEAD EACH TIME THERE IS A BID FOR A RETRY REGISTER AND BOTH REGISTERS ARE BUSY.	12	BL-R	6
TGP	TRUNK GROUP PEG *	PROVIDES, FOR ONE TRUNK GROUP AT A TIME, A MOMENTARY GROUND ON THE TGP LEAD EACH TIME THE MARKER ESTABLISHES A CONNECTION TO A TRUNK GROUP.	11	R-BL	31
TGO	TRUNK GROUP OVERFLOW *	PROVIDES, FOR ONE TRUNK GROUP AT A TIME, A MOMENTARY GROUND ON THE TGO LEAD EACH TIME THE MARKER ATTEMPTS TO TERMINATE WITHIN A TRUNK GROUP AND FINDS ALL TRUNKS BUSY.	10	S-W	5
ALBO	ALL LINKS BUSY OVERFLOW	PROVIDES A STEADY GROUND ON THE ALBO LEAD WHEN THE MARKER ATTEMPTS TO ESTABLISH A CONNECTION AND ALL LINKS ARE BUSY. THIS GROUND CONDITION PERSISTS FOR THE DURATION OF THE ALL LINKS BUSY CONDITION.	13	R-O	32
RP1 RP0	REGISTER 1 PEG REGISTER 0 PEG	PROVIDES A STEADY GROUND ON THE RP-LEAD FOR THE DURATION OF TIME THE REGISTER IS IN USE.	22 21	BL-BK BK-BL	11 36
BY1 BY0	REGISTER 1 BUSY REGISTER 0 BUSY	PROVIDES A STEADY GROUND ON THE BY-LEAD FOR THE DURATION OF TIME THE REGISTER IS HELD IN THE BY CONDITION.	20 19	S-R R-S	10 35
NSN1 NSN0	REGISTER 1 NO SUCH NUMBER REGISTER 0 NO SUCH NUMBER	PROVIDES A GROUND ON THE NSN LEAD EACH TIME THE REGISTER REACHES THE NO SUCH NUMBER CONDITION. THE GROUND CONDITION REMAINS FOR THE DURATION OF THE NSN CONDITION.	18 17	BR-R R-BR	9 34
TO1 TO0	REGISTER 1 TIMEOUT REGISTER 0 TIMEOUT	PROVIDES A MOMENTARY GROUND ON THE TO - LEAD EACH TIME THE REGISTER TIMES OUT.	16 15	G-R R-G	8 33
TUR (20-79)	TRAFFIC USAGE REGISTER (STATIONS 20-79)	PROVIDES A MOMENTARY OR STEADY GROUND ON THE TUR LEAD FOR THE DURATION OF TIME ANY TRUNK IS BUSY. THE MOMENTARY GROUND, NORMALLY PROVIDED, REPEATS EVERY EIGHT SECONDS; OPTION M PROVIDES A STEADY GROUND IN PLACE OF THE MOMENTARY GROUND.		(SEE 2.01)	

* Requires strapping on TS(D) Slide 1, Top. See PSD-2G030-01, Note 405, and PSD-2G031-01, Note 401.

Note: A -48V battery (M1, M2, M3) is available on pchgs 32, 34, and 36 of TS (M) with matching ground on pchgs 31, 33, and 35 for use with 14-type traffic registers.

Traffic Register Connections Table
Fig. 13

STEP	WORK TO BE PERFORMED
1	Unpack and mount new line unit per Fig. 4.
2	Mount and wire 44V4 shelves for all ten line cks. per Figure 15 (Equip. with plug-in components as necessary).
3	Mount and wire signaling units as required per Paragraph 4.02, 4.03, 4.04, 4.05 and 4.06.
4	Wire M.A. lead per PSD 2G031-01 CAD5 and PT 2G030-11 Fig. 1 and 2.
5	Plug-in AMPL connectors (located on wiring side of each line circuit group).
6	Remove unassigned tens group strapping shown in Paragraph 5.05.
7	Place assigned tens group strapping per Paragraph 5.02, 5.03 or 5.04.
8	Change M.A. options P, R and S. Fig. 11 A.
9	Place assigned or unassigned strapping for each individual line circuit as shown in Paragraph 3.02 and 3.03.
10	Place all other options as specified per the Paragraph covering them.

ITEM	REQUIRED WORK FUNCTIONS
1	Unpack and mount the 44V4 shelves in the proper mounting spaces as shown in Fig. 15 for the new line circuit group.
2	Wire the 5 new 44V4 shelves PAS 2G030-01 CAD 6 and 24 PT 2G030-11 Fig. 1 and 2
3	Equip all sockets of 44V4 circuits to be turned up as specified by the service orders.
4	Perform line up and tests as required.

Figure 14