

**MISCELLANEOUS INTERTOLL TRUNKS
AND ASSOCIATED EQUIPMENTS
RELAY RACK UNITS
EQUIPMENT DESIGN REQUIREMENTS
STEP-BY-STEP AND TOLL SYSTEMS**

1. GENERAL

Scope

1.01 This specification, together with supplementary information listed herein, covers equipment design requirements for the framework, equipment, and circuits to be used in the manufacture and installation of 2-inch mounting plate relay rack units for intertoll dialing circuits in step-by-step and toll offices that are directly associated with the dial equipment. The units covered in this specification and others to be covered later supersede units in J61533 (821-706-152), J61571 (821-706-153), and J61579 (821-706-160). The purpose of these replacements is to incorporate units in this classification in one specification, such units conforming as to general apparatus layouts, J codes, and lists with other 2-inch mounting plate relay rack units in step-by-step offices.

1.02 This specification is reissued:

- (a) To incorporate Addendum Issue 3.
- (b) To rate list 3 of J61401C Mfr Disc. and add lists 4 and 5 to J61401C. This change agrees with SD-64485-01, Issue 15D.
- (c) To change list 8 and add Note D to J61401E. This change agrees with SD-64539-01, Issue 15B.

1.03 These units mainly comprise units for trunk circuits from or to step-by-step switching equipment, but also include units for other circuits such as the rotary out trunk switch test circuit SD-56118-01 per J61401D and intertoll dialing switch trouble alarm circuit SD-55278-01 per J61401H.

1.04 It is intended eventually to include in this specification units for all intertoll dialing circuits of the classifications in 1.01 and 1.03. Until these additional units are available, however, existing units in the specification listed in 1.01 shall be furnished.

Description

1.05 These relay rack units consist mainly of one or more 2- by 23-inch mounting plates on which the apparatus for one or more circuits is mounted and, unless otherwise specified, are surface wired to one or more terminal strips of the cable-well type. The terminal strips facilitate shop testing of the circuits, provide a place for strapping to obtain circuit options, and serve as a convenient place for the installer to make necessary external connections or apply optional installer strapping. Plastic retaining clips are furnished with these units for use by the installer to retain the switchboard cable or interunit wiring leads where they approach the terminal strips. These 2-inch units may be mounted on relay racks drilled for 1-3/4 inch mounting plates by using adapters per ED-92243-01, as illustrated on ED-92242-01.

1.06 All units covered in this specification are SW1 surface wired, using No. 24 gauge type BG wire, unless otherwise specified.

1.07 The choice of trunk or other circuits to be used for a particular installation may be determined by consulting the keysheet or other pertinent information for the system, and the choice of optional arrangements to specify may be obtained from the option tables or notes on the circuit SD drawings and the descriptions in the lists and notes under the appropriate code in this specification. A numerical list of circuit drawings

and associated J codes will be found under Subdivisions of Equipment and Detailed Index. Information on the size and capacity of the units is indicated under the descriptive information for the lists for each basic unit.

1.08 When making an incoming trunk busy, it is necessary ordinarily to do this at the preceding equipment, usually in the distant originating office. As an indication or reminder to this effect, a

transparent red-tinted plastic sheet designation card cover per P-40C869 is available for inserting in the trunk designation card holder over the designation card. This imparts a red color to the designation card but does not appreciably reduce the visibility of the information. These covers are available in package lots of 100. They may be applied either by the installer or telephone company maintenance forces, as required.

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

WE J drawings listed should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J61401A	AT&TCo Std	Outgoing Trunk Unit — From Intertoll Dialing Incoming or 2-Way Trunk or Selector Multiple — With Optional Busy Flash	J61401A-()	✓ SD-55301-01
J61401B	AT&TCo Std	Intertoll Dialing Incoming Trunk Units — From Dial or Manual Office — Loop Signaling — Reverse Battery Supervision	J61401B-()	SD-64482-01
J61401C	AT&TCo Std	Toll Switching Trunk or Auxiliary Intercepting Trunk Unit — From Intertoll Selector Multiple — 4-Wire to Toll Intermediate Selector or to Intercepting Trunk	J61401C-()	SD-64485-01
J61401D	AT&TCo Std	Test Unit — For Intertoll Dialing Rotary Out Trunk Switches	J61401D-()	SD-56118-01
J61401E	AT&TCo Std	Outgoing Trunk Unit — From Intertoll Selector Multiple to No. 1, 2, 3, 4, 6, 7, or 7A Information Desk or No. 19 or 23 Operating Room Desk	J61401E-()	SD-64539-01
J61401F	A&M Only	Outgoing Trunk Unit — From Intertoll Selector Multiple — For Use With Simplex or Composite Signaling Type A or B	J61401F-()	SD-55109-01
J61401G	AT&TCo Std	Intertoll Dialing Toll Switching Trunk Unit — To Step-by-Step Loop Dialing Toll Transmission Selector	J61401G-()	SD-64473-01
J61401H	AT&TCo Std	Intertoll Dialing Switch Trouble Alarm Unit — For Permanent Signal, Release, and Fuse Alarms, Rotary Out Trunk Switch Alarms, and Common Timing — For Offices Where Step-by-Step Common Timing Equipment Is Not Available in Same Building	J61401H-()	SD-55278-01

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J61401J	A&M Only	Intertoll Trunk Unit — From Intertoll Selector Multiple To Precede a Through or Auxiliary Intertoll Selector or Supervisory Control Circuit Connecting to No. 1 Toll Switchboard Intertoll Trunks	J61401J-()	SD-55239-01
J61401L	AT&TCo Std	Toll Switching Trunk Unit — To Incoming Trunk in Step-by-Step Office — Controlled Ringing — Simplex or Type B Composite Signaling	J61401L-()	SD-55379-01
J61401M	AT&TCo Std	Intertoll Dialing Trunk Unit — For Connecting Type B CX Signaling Circuit — To Loop Signaling Circuit	J61401M-()	SD-64824-01
J61401N	AT&TCo Std	One-Way Trunk Unit — Incoming to Intertoll Selector or Operator — For Use With Simplex or Composite Signaling Type B	J61401N-()	SD-64590-01, Fig. 1, 2, 3, 4, and 8
J61401R	A&M Only	Auxiliary Trunk Unit — Outgoing Dial Repeating — Incoming Automatic or Dialing — For Use With Outgoing Trunk Circuit at Toll Switchboard — Arranged for Use With Simplex or Composite Signaling Type B	J61401R-()	SD-64469-01, Fig. 1, 2, 3, 7, and B
J61401S	AT&TCo Std	Outgoing Trunk Unit — From Intertoll Selector to Operator Office — Arranged To Prevent Transmission of Dial Tone — For Use With Simplex Signaling or Composite Signaling Type A or B	J61401S-()	SD-55275-01
J61401T	AT&TCo Std	Intertoll Dialing Trunk Unit — From Intertoll Selector Multiple or Auxiliary Intertoll Selector Multiple — To Precede a Through or Auxiliary Intertoll Selector or Supervisory Control Circuit or 2-Way Ringdown Intertoll Trunk Circuit — Connecting to No. 3, 3C, or 3CL Toll Switchboard Intertoll Trunks	J61401T-()	✓ SD-55232-01

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J61401U	AT&TCo Std	Toll Switching Trunk Unit — To Step-by-Step — Repeated Dialing Toll Train	J61401U-()	SD-64487-01
J61401W	AT&TCo Std	Intertoll Dialing Trunk Unit — From Intertoll Dialing Incoming or 2-Way Trunk or Selector — To Auxiliary Intertoll Selector Having Access to Reverse Battery Supervision Trunks and Intertoll Dialing Trunks and Selectors	J61401W-()	SD-55243-01
J61401Y	AT&TCo Std	Intertoll Dialing Timing Units — For Controlling 2-Second Ringing Signal on Intertoll Dialing Trunks	J61401Y-()	SD-64587-01
J61401AA	AT&TCo Std	Intertoll Dialing Test Line Unit	J61401AA-()	SD-56221-01
J61401AB	AT&TCo Std	Auxiliary Intertoll Dialing — Trunk Unit — For Use Between Intertoll Trunk Circuit and Rotary Outgoing Trunk Switch	J61401AB-()	SD-56378-01
J61401AC	AT&TCo Std	Directional Reservation Unit — For Intertoll Dialing — Common Equipment Unit	J61401AC-()	SD-56470-01
J61401AD	AT&TCo Std	Directional Reservation Busy-Test and Make-Busy Applique Unit	J61401AD-()	SD-56470-01
J61401AE	A&M Only	Guarding Time Relay — Applique Unit	J61401AE-()	SD-64469-01 SD-64473-01 SD-64487-01
J61401AF	AT&TCo Std	Auxiliary Trunk Unit — Outgoing Dial Repeating — Incoming Automatic or Dialing — For Use With Outgoing Trunk Circuit at Toll Switchboard — Arranged for Use With Simplex or Composite Signaling Type B	J61401AF-()	SD-64469-01, Fig. 1, 2, 3, 7, and C
J61401AG	AT&TCo Std	Outgoing Trunk Unit — From Intertoll Selector Multiple — For Use With Simplex or Composite Signaling Type A or B	J61401AG-()	SD-55109-01

Circuit Schematic Index

CIRCUIT DRAWING	J61401 EQPT CODE
SD-55109-01	F, AG
SD-55232-01	T
SD-55239-01	J
SD-55243-01	W
SD-55275-01	S
SD-55278-01	H
SD-55301-01	A
SD-55379-01	L
SD-56118-01	D
SD-56221-01	AA
SD-56378-01	AB
SD-56470-01	AC, AD
SD-64469-01	R, AE, AF
SD-64473-01	G, AE
SD-64482-01	B
SD-64485-01	C
SD-64487-01	U, AE
SD-64539-01	E
SD-64587-01	Y
SD-64590-01	N
SD-64824-01	M

2. SUPPLEMENTARY INFORMATION

- 800-600-000—Checking List—General Equipment Requirements
- 814-000-000—Step-by-Step Systems Index
- J38805—814-005-151—No. 355A Offices—General
- J39206—814-005-150—No. 1 and 350A Offices—General
- J61525—821-700-154—Intertoll Dialing Equipment—General
- J61533—821-706-151—Relay Rack Units
- J61571—821-706-153—Intertoll Trunk Relay Rack Units
- J61579—821-706-160—Miscellaneous Relay Rack Units
- J93001—801-006-153—Relay Rack Unit Framework and Local Cable
- J97025—801-006-155—Relay Rack—Angle Type

3. DRAWINGS

For additional drawings forming a part of this specification, see listings under Subdivisions of Equipment and Detailed Index.

Keysheets

- SD-31359-01—No. 1 Step-by-Step Office
- SD-31364-01—No. 350A Office
- SD-31780-01—No. 355A Office
- SD-62440-01—Toll Switchboard No. 3
- SD-62525-01—Toll Switchboard No. 1
- SD-64800-01—Toll Switchboards No. 3 and 3CL

Framework

- ED-61519-01—No. 284A Jack Mounting
- ED-91837-01—Relay Rack Assembly—Angle Type—1-Foot 0-Inch Sheet Metal Base—7 Feet 0 Inch, 9 Feet 0 Inch, 10 Feet 6 Inches, and 11 Feet 6 Inches High
- ED-92242-01—Application of 2-Inch Plates or Units to 1-3/4 Inch Racks, or 1-3/4 Inch Plates or Units to 2-Inch Racks—Typical
- ED-92243-01—Relay Rack Unit Framework
- ED-92465-01—Relay Rack Assembly—Floor Supported—Bulb-Angle Type—6 Feet 10-1/2 Inches High

4. EQUIPMENT

J61401A—AT&T Co Std—Outgoing Trunk Unit—From Intertoll Dialing Incoming or 2-Way Trunk or Selector Multiple—With Optional Busy Flash

Equipment—J61401A-()

List 2—Wiring and equipment per SD-55301-01, Fig. 1, S apparatus and wiring only, required in addition to list 1 or 11 to arrange trunk circuits for connection to trunks to a community dial office with dial tone. (See Note D.)

List 3—Wiring and equipment per SD-55301-01, Fig. 1, H apparatus and wiring only, required in addition to list 1 or 11 to arrange trunk circuits for connection to toll transmission selectors with simplex controlled ringing. (See Note D.)

List 4—Equipment per SD-55301-01, Fig. 1, T apparatus only, required in addition to list 1 or 11 to arrange trunk circuits for connection to incoming pulse correcting repeaters in distant office.

List 5—Equipment per SD-55301-01, Fig. 1, P apparatus only, required in addition to list 1 or 11 when connection to incoming pulse

correcting repeaters in distant office is not required.

List 6—Wiring and equipment per SD-55301-01, Fig. 3, required in addition to list 1 or 11 for use when trunk circuits connect to incoming selectors in the same or adjacent building.

List 7—Equipment per SD-55301-01, Fig. 1, Y apparatus only, required in addition to list 1 or 11 when trunk impedance at 1000 Hz is 1200 ohms or less, or when impedance ratio is 1 to 1.5 or 1.5 to 1. (See Note C.)

List 8—Equipment per SD-55301-01, Fig. 1, X apparatus only, required in addition to list 1 or 11 when trunk impedance at 1000 Hz is greater than 1200 ohms, or impedance ratio is 1 to 2.5. (See Note C.)

List 9—Equipment per SD-55301-01, Fig. 1, Z apparatus only, required in addition to list 1 or 11 when conversion for use with trunk impedances above and below 1200 ohms, or impedance ratios of 1 to 2.5 and 1 to 1.5, or 1.5 to 1 are required. (See Note C.)

List 10—Equipment per SD-55301-01, Fig. 1, ZB apparatus only, required in addition to list 1 or 11 for connection to M1BC carrier terminal (600-ohm impedance in same building), or when impedance ratio is 1 to 1. (See Note C.)

List 11—Framework, assembly, wiring, and equipment for a 2-circuit intertoll dialing outgoing trunk unit per SD-55301-01, Fig. 1 and B, with B, F, J, and ZE apparatus and ZM wiring.

(No. of Mtg Plts 3—No. of Ckts 2)

List 12—Wiring and equipment per SD-55301-01, Fig. 4 and ZN wiring, required in addition to list 11 when connection to an intertoll dial selector multiple is required. (Omit ZM wiring.)

Notes

A. Furnish V wiring in addition to list 1 or 11 in nonpad offices or in pad offices with pad out. Furnish W wiring in addition to list 1 in pad offices with pad in.

B. Provide building-out capacitor per SD-55301-01, Fig. 2 as required on a miscellaneous basis.

C. Furnish R wiring and other associated repeating coil wiring per Note 104 of SD-55301-01 in addition to list 9 for trunk impedances at 1000 Hz of greater than 1200 ohms or when impedance ratio is 1 to 2.5; otherwise, furnish Q wiring and other associated repeating coil wiring per Note 104 in addition to list 7, 8, 9, or 10 for the required trunk impedance or impedance ratio. The impedance ratio should be specified by the telephone company when E1- or E2-type repeater alone is used.

D. Provide A wiring in addition to list 1 or 11 when list 2 or 3 is not furnished.

E. The strapping arrangement of the C, D, and D1 resistors in the unit per list 11 shall be in accordance with job requirements (nonrecord).

J61401B—AT&T Co Std—Intertoll Dialing Incoming Trunk Units—From Dial or Manual Office—Loop Signaling—Reverse Battery Supervision

Equipment—J61401B()

List 1—Framework, assembly, wiring, and equipment for a 2-circuit intertoll incoming trunk unit per SD-64482-01, Fig. 1 and B.

(No. of Mtg Plts 3—No. of Ckts 2)

List 2—Framework, assembly, wiring, and equipment for a 3-circuit intertoll incoming trunk unit per SD-64482-01, Fig. 1 and B.

(No. of Mtg Plts 4—No. of Ckts 3)

List 3—Equipment per SD-64482-01, A apparatus and X wiring only, required in addition to list 1 or 2 for each circuit when the trunk impedance at 1000 Hz is 1200 ohms or less. (See Note A.)

List 4—Equipment per SD-64482-01, B apparatus and X wiring only, required in addition to list 1 or 2 for each circuit when the trunk impedance at 1000 Hz is greater than 1200 ohms. (See Note A.)

List 5—Equipment per SD-64482-01, C apparatus only, required in addition to list 1 or 2 for each circuit when conversion for use with impedances above and below 1200 ohms is required. (See Note A.)

Notes

A. Furnish two lists 3, 4, or 5 with each list 1 and three lists 3, 4, or 5 with each list 2.

- B. Lists 1 and 2 shall be specified to provide most economically for the number of circuits required in each installation, taking growth into account.
- C. Furnish V wiring in addition to list 1 or 2 in nonpad control offices or in pad control offices where required to cut the pad out in a connected intertoll trunk. Furnish W wiring to retain the pad in a connected intertoll trunk.
- D. Furnish X wiring in addition to list 5 for trunk impedances at 1000 Hz of 1200 ohms or less, or Y wiring for trunk impedances of greater than 1200 ohms.
- E. Provide building-out capacitor per SD-64482-01, Fig. 2, as required on a miscellaneous basis.

J61401C—AT&TCo Std—Toll Switching Trunk or Auxiliary Intercepting Trunk Unit—From Intertoll Selector Multiple—4-Wire to Toll Intermediate Selector or to Intercepting Trunk

Equipment—J61401C-()

List 2—Wiring and equipment per SD-64485-01, Fig. 1, S apparatus and wiring only, required in addition to list 1, 3, or 4 when intertoll trunks are terminated on a via-net-loss basis. (See Note C.)

List 4—Frame assembly, wiring, and equipment for a 2-circuit toll switching or auxiliary intercepting trunk unit per SD-64485-01, Fig. 1, B, and F, and options N and U, less repeating coils. (See Note A.)

(No. of Mtg Plts 3—No. of Ckts 2)

List 5—A&M Only—Wiring and equipment required in addition to list 4 to provide for pad control per SD-64485-01, Fig. 1, option M. (Omit option N.)

Notes

- A. The repeating coils are covered by lettered list on the manufacturing J drawing.
- B. Provide Y wiring in pad control office (A&M Only).
- C. When intertoll trunks are not terminated on a via-net-loss basis, provide T wiring.

J61401D—AT&TCo Std—Test Unit—For Intertoll Dialing Rotary Out Trunk Switches

Equipment—J61401D-()

List 1—Assembly, wiring, and equipment for one test circuit, initial test jacks and lamps, and guard lamp for a test unit universally applicable for use with or without additional appearances of test jacks and lamps per SD-56118-01, Fig. 1 and 2, with V apparatus and V and Z wiring, and X and Y wiring to the unit terminal strip. (See Note A.)

(No. of Mtg Plts 1—No. of Ckts 1)

List 2—Equipment per SD-56118-01, Fig. 3, required for one remote control test set.

List 3—Equipment per SD-56118-01, Fig. 4, required for one patching cord.

Notes

- A. The installer shall provide the Y wiring strap (nonrecord) at the unit terminal strip if there is no succeeding appearance of the test jacks and lamps or X wiring to a succeeding appearance, as required.
- B. The unit per list 1 shall be mounted between the second and third rotary out trunk switch units from the bottom of a relay rack bay. In the case of three adjacent bays of rotary out trunk switch equipment, this unit shall be mounted in the middle bay so that it will be accessible to all three bays.
- C. The apparatus for additional appearances of test jacks and lamps per SD-56118-01, Fig. 2, shall be shipped loose and equipped by the installer on the No. 284A jack mounting per ED-61519-01, Fig. 23.

J61401E—AT&TCo Std—Outgoing Trunk Unit—From Intertoll Selector Multiple to No. 1, 2, 3, 4, 6, 7, or 7A Information Desk or No. 19 or 23 Operating Room Desk

Equipment—J61401E-()

List 2—Equipment per SD-64539-01, Fig. 1, C apparatus only, required in addition to list 1 or 6 for trunk impedances at 1000 Hz of 1200 ohms or less.

List 3—Equipment per SD-64539-01, Fig. 1, D

apparatus only, required in addition to list 1 or 6 for trunk impedances at 1000 Hz of greater than 1200 ohms.

List 5—Wiring and equipment per SD-64539-01, Fig. 1, R apparatus and wiring only, required in addition to list 1 or in addition to lists 6 and 7 when group-busy registration is required. (See list 8.)

List 6—Assembly, wiring, and equipment for one outgoing trunk, less optional features, per SD-64539-01, Fig. 1, less all feature options. (See Note D.)

(No. of Mtg Plts 1—No. of Ckts 1)

List 7—Wiring and equipment per SD-64539-01, J apparatus and wiring and M wiring, required in addition to list 6 except when trunk is associated with any No. 4 toll or crossbar tandem system and the step-by-step switch train has one rank of switches omitted.

List 8—Wiring and equipment per SD-64539-01, H, K, and ZA apparatus and wiring, required in addition to list 6 when trunk is associated with any No. 4 toll or crossbar tandem system and where the step-by-step train has one rank of switches omitted; also provides for connection to group-busy register.

Notes

- A. Furnish V wiring in addition to list 1 in nonpad control offices and W wiring (A&M Only) in pad control offices.
- B. Provide building-out capacitor per SD-64539-01, Fig. 2, as required on a miscellaneous basis.
- C. Provide X wiring in addition to list 6 when incoming trunk at desk is jack ended or key ended.
- D. Provide ZC wiring for a No. 23 type desk only; for all others, provide ZB wiring.

J61401F—A&M Only—Outgoing Trunk Unit—From Intertoll Selector Multiple—For Use With Simplex or Composite Signaling Type A or B

Equipment—J61401F()

List 1—Assembly, wiring, and equipment for a 2-circuit outgoing trunk unit per SD-55109-01, Fig. 1. (See Note A.)

(No. of Mtg Plts 1—No. of Ckts 2)

List 3—A&M Only—Wiring and equipment per SD-55109-01, four Fig. 2, ZA apparatus and wiring only, omit A wiring, and four No. 210A terminals for mounting the A varistors required in addition to list 2 for connection to step-by-step CAMA decoder circuit for all-trunks-busy indication when connection to traffic usage recorder circuit is also provided.

List 4—Assembly, wiring, and equipment for four group-busy and make-busy circuits required in addition to each two list 1 when provision for any of the following features is required: voice frequency termination during idle condition, connection to group-busy register or traffic-usage recorder circuit, connection to CAMA decoder circuit without connection to group-busy register or traffic usage recorder circuit.

(No. of Mtg Plts 1—No. of Ckts 4)

	WIRE	EQUIP	NOTES
Trunk Ckt, SD-55109-01: Group-Busy Relay, Fig. 5, With S App and Wiring and A Wiring, Less G Wiring	4	4	E,F
Make-Busy Key, Fig. 1, H App and Wiring Only	4	4	
Guard Lamp, Fig. 4	1	1	

Notes

- A. Provide J wiring at unit terminal strip in addition to list 1 when list 2 or 4 is not furnished.
- B. Provide G wiring at the unit terminal strip in addition to list 2 or 4 when connection to traffic usage recorder is required.
- C. When pulse repeating requirements are used, add or remove M, N, Q, and R wiring straps between the terminals of the A and A1 resistors to obtain the required percent break (nonrecord).
- D. Provide building-out capacitor per SD-55109-01, Fig. 3, as required on a miscellaneous basis.
- E. Units per list 2 or 4 should be specified if required either initially or ultimately, and each

such unit shall be located between the two associated units per list 1. If the second list 1 is not furnished initially, spare space shall be left on the relay rack for possible future installation. If units per list 2 or 4 are not specified initially, units per list 1 shall be equipped adjacent to each other on the relay rack and, if lists 2 or 4 are specified later, they shall be mounted as near as possible on the relay rack to associated units per list 1.

- F. When the unit per list 4 connects to traffic usage recorder and connection to a step-by-step CAMA decoder is also required, A wiring in the unit consisting of a strap between two punchings of a No. 210A terminal per circuit shall be removed by the installer. When the unit connects to a group-busy register circuit, the connection to a CAMA decoder circuit when required is taken from the register circuit.
- G. Provide ZD wiring and apparatus and remove ZC wiring and apparatus in addition to list 1 to improve transmission performance.

J61401G—AT&T Co Std—Intertoll Dialing Toll Switching Trunk Unit—To Step-by-Step Loop Dialing Toll Transmission Selector

Equipment—J61401G()

- List 2**—Wiring and equipment per SD-64473-01, Fig. 1, A apparatus and X and A wiring only, required in addition to list 1 or 5 for trunk impedances at 1000 Hz of 1200 ohms or less.
- List 3**—Wiring and equipment per SD-64473-01, Fig. 1, B apparatus and X wiring only, required in addition to list 1 or 5 for trunk impedances at 1000 Hz of greater than 1200 ohms.
- List 4**—Equipment per SD-64473-01, Fig. 1, C apparatus only, required in addition to list 1 or 5 when conversion for use with trunk impedances above and below 1200 ohms is desired. (See Note B.)
- List 5**—Framework, assembly, wiring, and equipment for a 2-circuit intertoll dialing toll switching trunk unit per SD-64473-01, Fig. 1, with

ZF wiring and apparatus.
(No. of Mtg Plts 3—No. of Ckts 2)

Notes

- A. Furnish V wiring in addition to list 1 or 5 in nonpad control offices and W wiring in pad control offices.
- B. When list 4 is furnished, connect X and A wiring for trunk impedances of 1200 ohms or less, and Y wiring for trunk impedances greater than 1200 ohms.
- C. Provide N installer wiring at unit terminal strip (nonrecord) when connection to auxiliary trunk circuit is not required.
- D. When pulse repeating requirements are used, add or cut straps between the terminals of the G and H resistors to obtain the required percent break.
- E. In offices having list 1 (Mfr Disc.), which requires a GT relay per SD-64473-01, Fig. 1, ZF option, an applique unit per J61401AE, List 1 or 2 for 6 or 12 GT relays, respectively, is available and shall be located within, or adjacent to, the area occupied by its associated trunks insofar as possible for maintenance purposes.

J61401H—AT&T Co Std—Intertoll Dialing Switch Trouble Alarm Unit—For Permanent Signal, Release, and Fuse Alarms, Rotary Out Trunk Switch Alarms, and Common Timing—For Offices Where Step-by-Step Common Timing Equipment Is Not Available in Same Building

Equipment—J61401H()

- List 1**—Framework, assembly, wiring, and equipment for a switch trouble alarm unit with one common timing circuit, two fuse alarm relays, and alarm timing relays for two permanent signals, two release alarms, and one rotary out trunk switch alarm.
(No. of Mtg Plts 3—No. of Ckts as indicated)

	WIRE	EQUIP	NOTES
Unit Mounting Bar, P-424403		3	
Switch Trouble Alarm Ckt, SD-55278-01:			
Common Timing Ckt, Fig. 1	1	1	
Alarm Timing Relays for Permanent Signals, Fig. 2	2	2	
Alarm Timing Relays for Release Alarms, Fig. 3	2	2	
Fuse Alarm Relays, Fig. 4	2	2	
Alarm Timing Relays for Rotary Out Trunk Switch Alarms, Fig. 5	1	1	

Fig. B only, required in addition to list 1 in nonpad control offices.

Note

- A. Provide building-out capacitor per SD-55239-01, Fig. 2, as required on a miscellaneous basis.

J61401L—AT&T Co Std—Toll Switching Trunk Unit—To Incoming Trunk in Step-by-Step Office—Controlled Ringing—Simplex or Type B Composite Signaling

Equipment—J61401L-()

- List 1**—Assembly, wiring, and equipment for a toll switching trunk unit per SD-55379-01, Fig. 1, 5, and 6, with N apparatus and wiring.

(No. of Mtg Plts 1—No. of Ckts 1)

- List 2**—Wiring and equipment per SD-55379-01, Fig. 1, X apparatus and wiring only, required in addition to list 1 for telephone repeater termination.

- List 2**—Assembly, wiring, and equipment for a trouble alarm supplementary unit arranged for alarm timing relays for two permanent signals and two release alarms.
(No. of Mtg Plts 1—No. of Ckts 2)

	WIRE	EQUIP	NOTES
Switch Trouble Alarm Ckt, SD-55278-01:			
Alarm Timing Relays for Permanent Signals, Fig. 2	2	2	
Alarm Timing Relays for Release Alarms, Fig. 3	2	2	

- List 3**—Wiring and equipment per SD-55278-01, Fig. 5, required in addition to list 2 for one set of alarm timing relays for rotary out trunk switch alarms.

Notes

- A. Provide R wiring strap at the unit terminal strip in addition to list 1 when connection to traffic usage recorder is required.
- B. In nonpad control offices or in pad control offices to remove pad in toll trunk connected at intertoll selector, provide Z wiring in addition to list 1.
- C. In pad control offices to retain pad in toll trunk connected at intertoll selector, provide Y wiring in addition to list 1.
- D. Provide building-out capacitor per SD-55379-01, Fig. 3, as required on a miscellaneous basis.
- E. When pulse repeating requirements are used, add or remove M, K, J, and H wiring straps at the terminals of the D and E resistors to obtain the required percent break (nonrecord).

J61401J—A&M Only—Intertoll Trunk Unit—From Intertoll Selector Multiple To Precede a Through or Auxiliary Intertoll Selector or Supervisory Control Circuit Connecting to No. 1 Toll Switchboard Intertoll Trunks

Equipment—J61401J-()

- List 1**—Framework, assembly, wiring, and equipment for an intertoll dialing intertoll trunk unit per SD-55239-01, Fig. 1.
(No. of Mtg Plts 2—No. of Ckts 1)

- List 2**—Wiring and equipment per SD-55239-01, Fig. A only, required in addition to list 1 in pad control offices.

- List 3**—Wiring and equipment per SD-55239-01,

J61401M—AT&T Co Std—Intertoll Dialing Trunk Unit—For Connecting Type B CX Signaling Circuit—To Loop Signaling Circuit

Equipment—J61401M-()

List 1—Assembly, wiring, and equipment for an intertoll dialing trunk unit with universal facilities for connecting or not connecting to incoming pulse corrector, and for voice-frequency termination during idle condition when required, per SD-64824-01, Fig. 1, with M, V, and T apparatus and M, N, V, and T wiring to the unit terminal strip. (See Notes A and B.)

(No. of Mtg Plts 1—No. of Ckts 1)

Notes

- A. When the unit per list 1 is to be connected to an incoming pulse corrector, installer shall correct T wiring at the unit terminal strip; otherwise, V installer wiring shall be connected.
- B. When provision for voice-frequency termination during idle condition is required, installer shall connect M wiring at the unit terminal strip; otherwise, N installer wiring shall be connected.
- C. Provide strapping at the terminals of the G and H resistors as required to obtain the correct percent break or required resistance values.
- D. Furnish a C resistor (A apparatus) as specified by the engineer.

J61401N—AT&T Co Std—One-Way Trunk Unit—Incoming to Intertoll Selector or Operator—For Use With Simplex or Composite Signaling Type B

Equipment—J61401N-()

List 1—Assembly, wiring, and equipment for an incoming trunk unit per SD-64590-01, Fig. 1, 3, and 4, with Y wiring.

(No. of Mtg Plts 1—No. of Ckts 1)

List 2—Wiring and equipment per SD-64590-01, Fig. 2, with M apparatus, required in addition to list 1 when connection to pad circuit is required. (See Note C.)

List 3—Equipment per SD-64590-01, Fig. 8 (D4 circuit pack), required in addition to list 1

when a timed off-hook signal on initial seizure from a No. 4A or 4M toll crossbar office is required.

Notes

- A. Provide V wiring in addition to list 1 in nonpad control offices or in pad control offices when it is desired to remove the pad in the toll trunk connected to the intertoll selector. Provide W wiring in addition to list 1 in pad control offices when it is desired to retain the pad in the toll trunk connected to the intertoll selector.
- B. If units per list 1 are not to have the C lead connected to patching jack circuit, and the intertoll circuits are associated with V1-, V2-, V3-, or 44-type repeaters, installer shall connect Z installer wiring at the unit terminal strip. This wiring shall not be connected when trunks are associated with 22-type repeaters.
- C. Provide M wiring in addition to list 2 for No. 3 toll offices and N wiring in addition to list 2 for No. 1 toll offices.
- D. When units per list 1 are associated with No. 4A or 4M offices, one timed off-hook 10-circuit unit per J61401P for SD-64590-01, Fig. 6, shall be furnished for each ten or fraction trunk units, connected by installer wiring between the unit terminal strips. Each unit per J61401P shall be located within, or adjacent to, the area occupied by the associated trunk units insofar as possible, or otherwise as close to the trunk units as possible.
- E. Provide building-out capacitors per SD-64590-01, Fig. 5, as required on a miscellaneous basis.

J61401R—A & M Only—Auxiliary Trunk Unit—Outgoing Dial Repeating—Incoming Automatic or Dialing—For Use With Outgoing Trunk Circuit at Toll Switchboard—Arranged for Use With Simplex or Composite Signaling Type B

Equipment—J61401R-()

List 4—Assembly, wiring, and equipment for a 2-way trunk unit arranged for conversion to an incoming trunk only and obtaining

all optional features including SD-64469-01, Fig. 7 (D4 circuit pack), required in addition to list 3 for each additional trunk circuit of five maximum with which GT relays 2 to 6 in list 3 are to be associated per SD-64469-01, one Fig. 1, with B, H, ZB, ZD, and ZO apparatus and wiring and Fig. 2 and C.

(No. of Mtg Plts 1—No. of Ckts 1)

List 5—Equipment per SD-64469-01, Fig. 7 (D4 circuit pack), required in addition to list 4 when a timed off-hook signal on initial seizure from a No. 4A or 4M toll crossbar or No. 5 crossbar office is required.

Notes

- A. When the unit per list 1, 3, or 4 is required for use as an incoming trunk only, installer shall add the A installer wiring straps and cut the ZB wiring strap at the unit terminal strip.
- B. When ZX installer wiring to the distributing frame for connection to the make-busy relay unit per an existing list 2 is provided, installer shall cut the ZY wiring strap at the unit terminal strip. Any circuits so cabled but not cross-connected to make-busy circuits at the distributing frame shall have the equivalent of the ZY wiring strap applied at the distributing frame by installer.
- C. If units per list 1, 3, or 4 are not to have the C lead connected to a patching jack circuit, and the intertoll circuits are associated with V1-, V2-, V3-, or 44-type repeaters, installer shall connect the G installer wiring at the unit terminal strip. G wiring shall not be connected when trunks are associated with 22-type repeaters.
- D. Provide building-out capacitors per SD-64469-01, K option, for incoming trunks, or K and KB options for 2-way trunks, as required, on a miscellaneous basis.
- E. In offices having list 1 (Mfr Disc.), which requires a GT relay per SD-64469-01, Fig. 1, ZM option, an applique unit per J61401AE, List 1 or 2 for 6 or 12 GT relays, respectively, is available and shall be located within, or adjacent to, the area occupied by its associated trunks insofar as possible for maintenance purposes. For application of this applique unit, the installer

is required to replace the S relay as well as to make a few minor wiring changes on the basic unit.

J61401S—AT&T Co Std—Outgoing Trunk Unit—From Intertoll Selector to Operator Office—Arranged To Prevent Transmission of Dial Tone—For Use With Simplex Signaling or Composite Signaling Type A or B

Equipment—J61401S-()

List 2—Assembly, wiring, and equipment for one outgoing trunk unit, per SD-55275-01, Fig. 1, T and M apparatus and wiring and J wiring. (No. of Mtg Plts 1—No. of Ckts 1)

Notes

- A. Furnish Y wiring in addition to list 1 or 2 in pad control or fixed pad offices, or in pad control offices to remove pad in toll trunk connected at intertoll selector.
- B. Furnish Z wiring in pad control offices to retain pad in toll trunk connected at intertoll selector.
- C. Provide building-out capacitors per SD-55275-01, Fig. 2, as required, on a miscellaneous basis.
- D. When pulse repeating requirements are used, cut or add straps across the A and A1 resistors as required to obtain the specified percent break.

J61401T—AT&T Co Std—Intertoll Dialing Trunk Unit—From Intertoll Selector Multiple or Auxiliary Intertoll Selector Multiple—To Precede a Through or Auxiliary Intertoll Selector or Supervisory Control Circuit or 2-Way Ringdown Intertoll Trunk Circuit—Connecting to No. 3, 3C, or 3CL Toll Switchboard Intertoll Trunks

Equipment—J61401T-()

List 1—Assembly, wiring, and equipment for one intertoll dialing trunk unit, per SD-55232-01, Fig. 1 and A. (No. of Mtg Plts 1—No. of Ckts 1)

Note

- A. Provide building-out capacitors per SD-55232-01, Fig. 2, as required on a miscellaneous basis.

J61401U—AT&T Co Std—Toll Switching Trunk Unit—To Step-by-Step—Repeated Dialing Toll Train

Equipment—J61401U-()

List 2—Equipment per SD-64487-01, Fig. 1, A apparatus and X and ZQ wiring only, required in addition to list 1, 6, or 7 for trunk impedances at 1000 Hz of 1200 ohms or less.

List 3—Equipment per SD-64487-01, Fig. 1, B apparatus and X wiring only, required in addition to list 1, 6, or 7 for trunk impedances at 1000 Hz of greater than 1200 ohms.

List 4—Equipment per SD-64487-01, Fig. 1, C apparatus only, required in addition to list 1, 6, or 7 when conversion for use with trunk impedances above and below 1200 ohms is desired. (See Note A.)

List 7—Framework, assembly, wiring, and equipment for two intertoll dialing toll switching trunks per SD-64487-01, Fig. 1, with ZV option.

(No. of Mtg Plts 5—No. of Ckts 2)

List 8—Wiring and equipment per SD-64487-01, Fig. 1, ZX apparatus and wiring and ZZ wiring in addition to list 1, 6, or 7 when it is required to send all-trunks-busy tone and/or line-busy tone.

Notes

- A. When list 4 is furnished, connect X wiring for trunk impedances of 1200 ohms or less and Y wiring for trunk impedances greater than 1200 ohms.
- B. Furnish V wiring in addition to list 1, 6, or 7 in nonpad control offices and W wiring (A&M Only) in pad control offices.
- C. Provide building-out capacitors per SD-64487-01, Fig. 3, as required on a miscellaneous basis.
- D. Provide ZJ installer wiring at unit terminal strip when connection to auxiliary trunk circuit is not required.

- E. In offices having list 1 (Mfr Disc.) which requires a GT relay per SD-64487-01, Fig. 1, ZU option, an applique unit per J61401AE, list 1 or 2 for 6 or 12 (GT) relays, respectively, is available and shall be located within or adjacent to the area occupied by its associated trunks insofar as possible for maintenance purposes.

J61401W—AT&T Co Std—Intertoll Dialing Trunk Unit—From Intertoll Dialing Incoming or 2-Way Trunk or Selector—To Auxiliary Intertoll Selector Having Access to Reverse Battery Supervision Trunks and Intertoll Dialing Trunks and Selectors

Equipment—J61401W-()

List 2—Wiring and equipment per SD-55243-01, Fig. 1, T apparatus and wiring, required in addition to list 1 or 8 when auxiliary intertoll selector has access to loop pulsing link or link- and nonlink-type community dial office. (See Note D.)

List 3—Wiring and equipment per SD-55243-01, Fig. 1, M apparatus and wiring, required in addition to list 1 or 8 when auxiliary intertoll selector has access to loop pulsing link- or nonlink-type community dial offices with dial tone. (See Note D.)

List 4—Equipment per SD-55243-01, Fig. 1, Y apparatus and Q wiring, required in addition to list 1 or 8 for trunk or office impedances at 1000 Hz of 1200 ohms or less.

List 5—Equipment per SD-55243-01, Fig. 1, X apparatus and Q wiring, required in addition to list 1 or 8 for trunk or office impedances of greater than 1200 ohms.

List 6—Equipment per SD-55243-01, Fig. 1, Z apparatus, required in addition to list 1 or 8 when conversion for use with trunk or office impedances above and below 1200 ohms is desired. (See Note A.)

List 7—Wiring and equipment per SD-55243-01, Fig. 1, N and Z apparatus and N wiring, required in addition to list 1 or 8 for trunk and office impedances at 1000 Hz of both 1200 ohms or less and greater than 1200 ohms.

List 8—Framework, assembly, wiring, and equipment for one intertoll dialing trunk unit per SD-55243-01, Fig. 1, with ZD wiring.

(No. of Mtg Plts 2—No. of Ckts 1)

List 9—Wiring and equipment per SD-55243-01, Fig. 1, ZC apparatus and wiring only, omit ZD wiring, required in addition to list 8, when fixed pad in this circuit is required.

Notes

- A. When list 6 is furnished, connect Q wiring for trunk impedances of 1200 ohms or less and R wiring for trunk impedances greater than 1200 ohms.
- B. Furnish V wiring in addition to list 1 or 8 in nonpad or fixed pad control offices and W wiring (A&M Only) in pad control offices.
- C. Provide building-out capacitor per SD-55243-01, Fig. 2, as required on a miscellaneous basis.
- D. Provide S wiring in addition to list 1 or 8 when list 2 is not furnished. Intertoll selector has access to nonlink-type community dial offices.
- E. Furnish E wiring in addition to list 1 or 8 when step-by-step local connector is arranged for flashes on line busy, and trunk or office impedance is either 1200 ohms or less or 1200 ohms or more.
- F. The value of the C resistor and the strapping arrangement of the D and D1 resistors in the unit per list 1 or 8 shall be in accordance with job requirements (nonrecord).

J61401Y—AT&TCo Std—Intertoll Dialing Timing Units—For Controlling 2-Second Ringing Signal on Intertoll Dialing Trunks

Equipment—J61401Y-()

List 1—Framework, assembly, wiring, and equipment for one 2-second ringing signal timing unit including regular timing, emergency timing, timing transfer, timing circuit alarm, and alarm relay circuits per SD-64587-01, two Fig. 1 and Fig. 3, 5, and E. (See Note A.)

(No. of Mtg Plts 3—No. of Ckts 1)

List 2—Framework, assembly, wiring, and equipment for one timing distributing unit including regular distributing, emergency distributing, distributing transfer circuit, and D lead resistance lamps for 20 trunk circuits per

SD-64587-01, two Fig. 2, one Fig. 4, and eight Fig. 6.

(No. of Mtg Plts 2—No. of Ckts 1)

List 3—Wiring and equipment per SD-64587-01, Fig. A, required in addition to list 1 where timing impulses are obtained from position clock circuit.

List 4—Wiring and equipment per SD-64587-01, Fig. B, required in addition to list 1 where timing impulses are obtained from machine ringing supply.

List 5—Wiring and equipment per SD-64587-01, Fig. C, required in addition to list 1 where timing impulses are obtained from 30-ipm interrupter.

List 6—Wiring and equipment per SD-64587-01, Fig. 7, required in addition to list 2 for one lead alarm circuit. (See Note B.)

Notes

- A. Provide wiring per SD-64587-01, Fig. 1A, as required.
- B. Provide one list 6 per office area or aisle, as required.

J61401AA—AT&TCo Std—Intertoll Dialing Test Line Unit

Equipment—J61401AA-()

List 1—Assembly, wiring, and equipment for one intertoll dialing test line unit per SD-56221-01, Fig. 1.

(No. of Mtg Plts 1—No. of Ckts 1)

J61401AB—AT&TCo Std—Auxiliary Intertoll Dialing—Trunk Unit—For Use Between Intertoll Trunk Circuit and Rotary Outgoing Trunk Switch

Equipment—J61401AB-()

List 1—Assembly, wiring, and equipment for two intertoll dialing auxiliary intertoll trunks per SD-56378-01, Fig. 1.

(No. of Mtg Plts 1—No. of Ckts 2)

List 2—Wiring and equipment per SD-56378-01, Fig. 1, W apparatus and wiring, required in addition to list 1 when auxiliary trunk circuit connects directly or through trunk circuit to switchboard arranged for dialing, and rotary out trunk switch selects trunks

to sender- or link-type office.

List 3—Wiring and equipment per SD-56378-01, Fig. 1, V apparatus and wiring, required in addition to list 1 when auxiliary trunk circuit connects directly or through trunk circuit to switchboard arranged for dc keypulsing, and rotary out trunk switch selects trunks to nonsender- or nonlink-type office.

Notes

- A. Provide X wiring in addition to list 1 when connection is required to outgoing trunks from step-by-step tandem selectors.
- B. Provide Y wiring in addition to list 1 when auxiliary trunk circuit connects directly or through trunk circuit to switchboard arranged for dc keypulsing, and rotary out trunk switch selects trunks to sender- or link-type office.
- C. Provide Z wiring in addition to list 1 when auxiliary trunk circuit connects directly or through trunk circuit to switchboard arranged for dialing, and rotary out trunk switch selects trunks to nonsender- or nonlink-type office.

J61401AC—AT&TCo Std—Directional Reservation Unit—For Intertoll Dialing—Common Equipment Unit

Equipment—J61401AC()

List 1—Assembly, wiring, and equipment for one directional reservation common equipment unit for 40 trunks maximum per SD-56470-01, Fig. 1, with Y and Z wiring. (See Note A.)

(No. of Mtg Plts 1—No. of Ckts 1)

Note

- A. One applique unit per J61401AD, List 1 is required in addition to J61401AC, List 1 for each ten intertoll dialing trunks in a trunk group up to a maximum of 40.
- B. One spare mounting plate space is required below this unit when mounted with unlike equipment. This provides for operating the 5R key unit.

J61401AD—AT&TCo Std—Directional Reservation Busy-Test and Make-Busy Applique Unit

Equipment—J61401AD()

List 1—Assembly, wiring, and equipment for one busy-test and make-busy applique unit required in addition to J61401AC, List 1 for each ten trunks in a group per SD-56470-01, two Fig. 2 and ten Fig. 3.

(No. of Mtg Plts 1—No. of Ckts 10)

J61401AE—A&M Only—Guarding Time Relay—Applique Unit

Equipment—J61401AE()

List 1—Assembly, wiring, and equipment for one guarding time relay applique unit required in addition to J61401G, J61401R, or J61401U for each six trunks per SD-64473-01, SD-64469-01, or SD-64487-01, respectively. (See Note A.)

(No. of Mtg Plts 1—No. of Ckts 6)

List 2—Assembly, wiring, and equipment for one guarding time relay applique unit required in addition to J61401G, J61401R, or J61401U for each 12 trunks per SD-64473-01, SD-64469-01, or SD-64487-01, respectively. (See Note A.)

(No. of Mtg Plts 1—No. of Ckts 12)

Note

- A. This applique unit shall be located within or adjacent to the area occupied by its associated trunk units insofar as possible for maintenance purposes.

J61401AF—AT&TCo Std—Auxiliary Trunk Unit—Outgoing Dial Repeating—Incoming Automatic or Dialing—For Use With Outgoing Trunk Circuit at Toll Switchboard—Arranged for Use With Simplex or Composite Signaling Type B

Equipment—J61401AF()

List 1—Framework, assembly, wiring, and equipment for a 2-circuit, 2-way trunk unit per SD-64469-01, Fig. 1, 2, C, and ZY and ZB wiring, arranged for conversion to an

incoming trunk only and providing for all optional features. (See Note A.)

(No. of Mtg Plts 3—No. of Ckts 2)

List 2—Wiring and equipment per SD-64469-01, Fig. 3, and ZX wiring, omit ZY wiring, required in addition to list 1 when make-busy feature is required.

List 3—Wiring and equipment per SD-64469-01, Fig. 1, K wiring and apparatus only, required in addition to list 1 when building-out capacitors for incoming trunks are required.

List 4—Wiring and equipment per SD-64469-01, Fig. 1, K and KB wiring and apparatus only, required in addition to list 1 when building-out capacitors for 2-way trunks are required.

List 5—Equipment per SD-64469-01, Fig. 7 (D4 circuit pack), required in addition to list 4 when a timed off-hook signal on initial seizure from a No. 4A or 4M toll crossbar or No. 5 crossbar office is required.

Notes

- A. When the unit per list 1 is required for use as an incoming trunk only, the installer shall add the A installer wiring straps and cut the ZB wiring strap at the unit terminal strip.
- B. When units per list 1 are associated with No. 4A or 4M offices, one timed off-hook 10-circuit per J61401P for SD-64469-01, Fig. 5 shall be furnished for each 10 or fraction trunk units, connected by installer wiring between the unit terminal strips. Each unit per J61401P shall be located within or adjacent to the area occupied by the associated trunk units insofar as possible, or otherwise as close to the trunk units as possible.
- C. If units per list 1 are not to have the C lead connected to a patching jack circuit, and the intertoll circuits are associated with V1-, V2-, V3-, or 44-type repeaters, installer shall connect the G installer wiring at the unit terminal strip. G wiring shall not be connected with 22-type repeaters.

J61401AG—AT&T Co Std—Outgoing Trunk Unit—From Intertoll Selector Multiple—For Use With Simplex or Composite Signaling Type A or B

Equipment—J61401AG-()

List 2—Framework, assembly, wiring, and equipment for a 2-circuit outgoing trunk unit with provision for any of the following features: voice frequency termination during idle condition and/or connection to group busy register or traffic usage recorder is required when connection to a CAMA decoder circuit without connection to group busy register or traffic usage recorder circuit.

(No. of Mtg Plts 2—No. of Ckts 2)

	WIRE	EQUIP	NOTES
Unit Mounting Bar, P424402			
Trunk Ckt, SD-55109-01:			
Make-Busy Key, Fig. 1,			
With H, T & ZD App and			
B, E, H, ZD & ZE Wiring	2	2	
Building-Out Capacitor,			
Fig. 3	2	2	
Guard Lamp, Fig. 4,			
With A Wiring	1	1	
Group Busy Relay, Fig. 5,			
With S App and A & S			
Wiring Less G Wiring	2	2	A,C

List 3—Wiring and equipment per SD-55109-01, Fig. 6, with ZF wiring, required in addition to list 2 where sleeve guard is required to be provided in this circuit. (Omit ZE wiring.)

Notes

- A. Provide G wiring at the unit terminal strip in addition to list 1 or 2 when connection to traffic usage recorder is required.
- B. When pulse repeating requirements are used, add or remove M, N, Q, and R straps between the terminals of the A and A1 resistors to obtain the required percent break (nonrecord).
- C. When the unit per list 1 or 2 connects to traffic usage recorder and connection to a step-by-step CAMA decoder is also required, a wiring in the unit consisting of a strap between 1T and 3T of the B relay shall be removed by the installer. When the unit connects to a group-busy register circuit, connection to a CAMA decoder circuit, when required, is taken from the register circuit.

5. GENERAL NOTES

List of A&M Only and Mfr Disc. Equipment				EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
				L2	Mfr Disc.	3	—
				J61401S,			J61401S,
EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT	L1	Mfr Disc.	2	L2
J61401A,	Mfr Disc.	3	J61401A,	J61401U,			J61401U,
L1			L11	L1	Mfr Disc.	2	L6
J61401C,			J61401C,	L5	Mfr Disc.	3	J61401U,
L1	Mfr Disc.	4	L3	L6	Mfr Disc.	3	L8
L3	Mfr Disc.	4	L4	J61401W,			J61401U,
L5	A&M Only	5	—	L1	Mfr Disc.	2	L7
J61401E,			J61401E,	J61401AE	A&M Only	2	J61401W,
L1 & L4	Mfr Disc.	2	L6	J61401AG,			L8
J61401F	A&M Only	4	—	J61401AG,			—
			J61401F,	L1	Mfr Disc.	4	J61401AG,
L2	Mfr Disc.	2	L4				L2
L3	A&M Only	2	—				
J61401G,			J61401G,				
L1	Mfr Disc.	2	L5				
J61401J	A&M Only	1	—				
J61401K	Mfr Disc.	3	—				
J61401P	Mfr Disc.	3	—				
J61401R	A&M Only	2	—				
L1 & L3	Mfr Disc.	2	J61401AF				

The above equipment has been replaced as indicated. Where A&M Only items appear, the issue numbers shown are those of the issue in which the rating was first applied.

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