FEATURE DOCUMENT
TWO-PARTY AND MULTIPARTY SERVICE
NO. 2 ELECTRONIC SWITCHING SYSTEM

CONTENTS PAGE

FIGURES PAGE

FIGURES PAGE

TABLES

FEATURE DEFINITION AND DESCRIPTION

1. DEFINITION/INTRODUCTION

DEFINITION

1.01 The Two-Party Service feature provides telephone service to a maximum of two customers on a common line. The Multiparty Service feature provides 4- or 8-party service to a maximum of eight customers on a common line.

INTRODUCTION

1.02 The No. 2 Electronic Switching System (ESS) provides service to 2-party and multiparty customers in the same way as individual customers except calls to another party on the same line (reverting calls) and calls requiring charging. Calls to 2-party and multiparty customers are processed similar to single party calls except that selection of which side of the line to ring (tip or ring) must be made, and for semiselective 4- and 8-party service, a special ringing code must be used to enable the parties on the called line to identify which party is being called.

1.03 The software required to provide this feature is provided in all issues of the No. 2 ESS generic program. The hardware needed consists of certain options provided in the ringing and tone circuit, regular and special ringing service circuits, and possibly a special group of operator trunk circuits depending on the type of reverting call handling selected. These items are discussed in Part 10 of this section.

1.04 The proper type of station ringers as described in Section 500-114-100, must be installed in the telephones at the customer's premises.

2. USER PERSPECTIVE

CUSTOMER

2.01 The Two-Party and Multiparty Service feature is intended to provide telephone service at a lower cost to customers by sharing line facilities. This feature provides 2-party full selective service, full selective or semiselective 4-party service, and semiselective 8-party service. Full selective service indicates that each multiparty customer can be rung without ringing the telephones of the other parties on that line. Semiselective service refers to an arrangement in which no more than two telephones are rung on a call to a multiparty line. Distinctive ringing codes are assigned to each party for identification.

2.02 Calls originated by 4- and 8-party customers are processed similar to individual customers with the exception that operator identification of the calling party is required on charge calls. Also, calls to another party on the same line (reverting call) is handled in a special manner.

2.03 When a 2-party or multiparty customer dials the directory number of a subscriber on the same line, a ***reverting*** call is initiated. The No. 2 ESS office has the option of handling a reverting call in one of four different ways:

(1) Route to busy tone—this option is used to deny this type of call. The calling customer hears a busy tone and is expected to go on-hook. The calling customer must dial the operator for assistance in completing the call.

(2) Route all reverting calls to an operator—this option allows the calls to be routed to an operator who rings the called customer, supervises the call, and makes any necessary charges.

(3) and (4) Complete the call automatically using:

(a) AC-DC Ringing—Reverting calls processed in an office that is not equipped with superimposed ringing require the calling customer to go on-hook upon reception of a busy tone provided after dialing has been completed. The calling line is rung first so that the calling customer knows that ringing has begun in case the called customer answers on the first ring. The calling customer then waits for the called customer to go off-hook which stops the ringing. Cessation of the ringing notifies the calling customer to remove the receiver and start talking.

(b) Superimposed Ringing—Reverting calls processed in an office equipped with superimposed ringing require 4-party and 8-party subscribers to dial an additional identifying digit. A second dial tone is returned to the calling line after the called customer's directory number has been dialed. At this time, the calling customer dials an additional

identifying digit. This digit (2 through 9) identifies the station of the calling customer. A busy tone is then provided and the call progresses in the same manner described for the ac-dc reverting call.

2.04 Reverting calls made by 2-party measured rate customers must use method (1) or (2).

2.05 The No. 2 ESS cannot identify the calling party on 4- and 8-party lines. Therefore, direct distance dialing (DDD) toll calls from customers with a 4- and 8-party service must be routed to an operator for party identification. After dialing the desired number, the calling party is connected to an operator who requests the calling number and records it before allowing the call to complete. If DDD for 4- and 8-party customers is not required, the customer may be instructed to dial a code for a toll operator (e.g., "0"). The toll operator then completes the toll call on a manual basis.

TELEPHONE COMPANY

2.06 The implementation and operation of this feature is handled by the combination of generic program, office translations, and ringing machine hardware.

2.07 The services of a traffic service position (TSP)/traffic service position system (TSPS) or a centralized automatic message accounting (CAMA) operator are required for station identification on DDD calls from 4- and 8-party lines. Zero or "0+" calls also require operator number identification (ONI) on 4- and 8-party stations, but can be routed to TSP/TSPS or a 3CL operator position for completion of the call.

3. SYSTEM PERSPECTIVE

FEATURE OPERATION

Originating Call by a Party-Line Customer

3.01 When a 2-party line originates, the system connects a customer dial pulse receiver (CDPR) to the customer's line via a network path. The tip party of a 2-party line applies a resistance ground on the tip and ring conductors when going off-hook. (The ring party does ***not*** apply a resistance ground.) The CDPR is put in the party test state before returning dial tone to test for the presence of a tip party ground. If no ground exists, the originating party is assumed to be the ring party. The appropriate originating major class is recorded in the transient call record (TCR) for use later if the call is a charge call. The remainder of the call processing for a 2-party customer is the same as for an individual line.

3.02 The No. 2 ESS cannot identify which party of a multiparty line is originating a call. When a multiparty customer places a call that must be charged, the system routes the call to a 3CL operator, a CAMA office or a TSP/TSPS office. The operator at these offices obtains the calling number from the customer and either completes the call manually (3CL) or allows the call to complete (CAMA or TSP/TSPS).

Ringing Methods

3.03 Ringing methods in No. 2 ESS are discussed in Section 232-190-146 Ringing Features. However, a brief description is given here. AC-DC is always provided for individual and 2-party ringing. The No. 2 ESS may also be provided with superimposed ringing if 4-party full selective and 8-party semiselective ringing is required. In addition, two different ringing codes are available (code 1 and code 2) which provide two distinctly different sounding rings at the station. See Figure 1 for an illustration of the two ringing codes.

3.04 AC-DC ringing consists of a potential of 86 (±2) volts ac at 20 cycles in series with negative 42.75 to 52.50 volts dc. AC-DC ringing is used for ringing stations not equipped with gas tube ringers. Two-party full selective service is provided by using only code 1 and ringing either tip to ground or ring to ground. Four-party semiselective service is provided by using code 1 and code 2; parties on the same side of the line hear the ringing code of the other. See Table A for party code assignments. Figure 2A shows the method of connecting station wiring for 2-party lines using ac-dc ringing. Figure 2B shows 4-party stations arranged for semiselective service using ac-dc ringing.

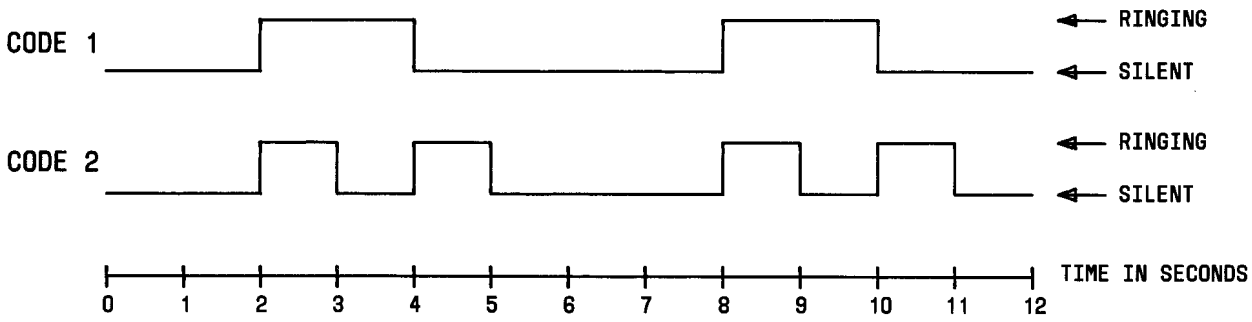

Fig. 1—Ringing Codes

TABLE A

AC-DC RINGING

2-PARTY FULL SELECTIVE		
PARTY	LINE SIDE	RINGING CODE
1	Ring	1
2	Tip	1
4-PARTY SEMISELECTIVE		
1	Ring	1
2	Tip	1
3	Ring	2
4	Tip	2

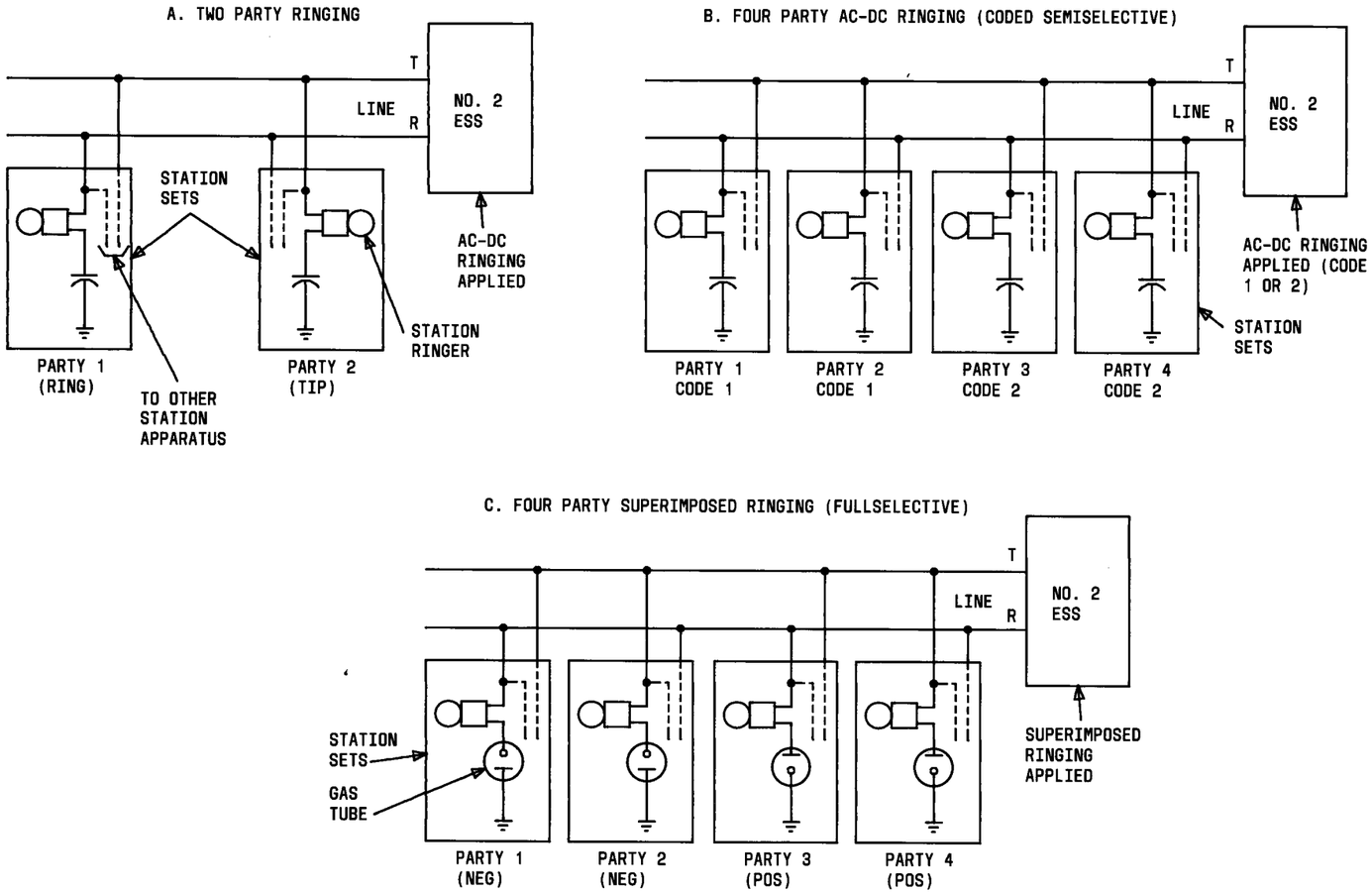

Fig. 2—Station Wiring for 2- and 4-Party Lines

3.05 Superimposed ringing consists of a potential of 86 (±2) volts ac at 20 cycles in series with either positive or negative 38 volts dc. Superimposed ringing is used for ringing gas tube ringers. Four-party full selective service is provided by using only code 1 ringing. The station sets are arranged so that two (of the four) ringers are connected from the ring side of the line to ground and the other two are connected to the tip side to ground. In addition, the gas tubes in two sets are connected in opposite polarity of the other two. When superimposed ringing of a given polarity is applied to one side of a 4-party line at the No. 2 ESS, only one ringer responds. This is the ringer with the gas tube connected in the proper direction for the gas to ionize and the tube to conduct. Eight-party semiselective service is similar to 4-party full selective service with the exception of two sets of ringing codes are available thereby doubling the number of distinctive rings. See Figure 2C and 3 for the method of connecting stations using superimposed ringing. See Table B for superimposed ringing party code assignments.

EIGHT PARTY SUPERIMPOSED RINGING (CODED SEMISELECTIVE)

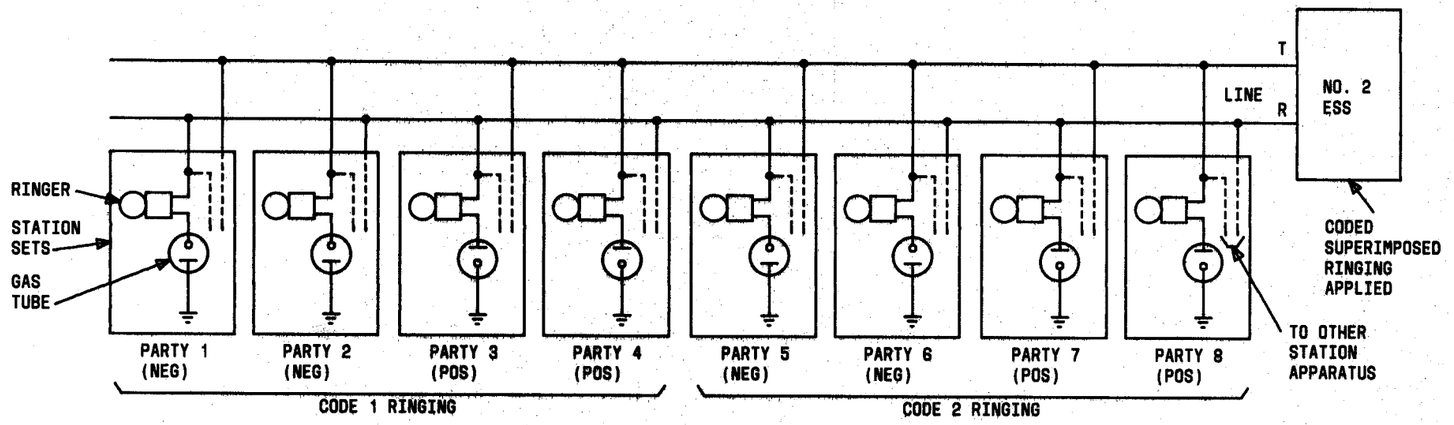

Fig. 3—Station Wiring for 8-Party Lines

Terminating Call to a Party-Line Customer

3.06 When the system detects seven dialed digits (assume the call is an intraoffice call), the dialed 4-digit directory number is translated into the terminal equipment number (TEN) and terminating class information for the called line. The called line is then examined to determine if it is idle. If the called line is idle, a circuit junctor is selected and a talking path is reserved for the calling line in the network map.

3.07 An idle ringing circuit and a path to the called line through a wire junctor are required. If the called line is a 2-party line, an SD-2H116 ringing circuit is selected for connection to the called line.

3.08 A talking path through the circuit junctor is reserved to the called line. Peripheral Order Buffer instructions are then given to connect

TABLE B

SUPERIMPOSED RINGING

2-PARTY FULL SELECTIVE				
PARTY	LINE SIDE	POLARITY	REVERTING IDENTIFICATION DIGIT	RINGING CODE
1	RING	—	NONE	1
2	TIP	—	NONE	1
4-PARTY FULL SELECTIVE				
1	RING	—	2	1
2	TIP	—	3	1
3	RING	+	4	1
4	TIP	+	5	1
8-PARTY SEMISELECTIVE				
1	RING	—	2	1
2	TIP	—	3	1
3	RING	+	4	1
4	TIP	+	5	1
5	RING	—	6	2
6	TIP	—	7	2
7	RING	+	8	2
8	TIP	+	9	2

the ringing circuit, to control the ringing circuit relays in the proper sequence, to allow pretrip test and code 1 ringing to the tip or ring side of the line, and to apply audible ringing tone to the called line through a relay in the circuit junctor. The ringing codes for 2-party lines for ac-dc and superimposed ringing are shown in Table A.

3.09 Calls to multiparty lines are processed the same as 2-party lines except an SD-2H126 special ringing circuit is selected for connection to the called line. A continuous source of ringing current is connected from the ringing and tone plant to the SD-2H126 ringing circuit. Coded ringing is provided in this circuit by a program controlled relay (F relay). Control of this relay provides the "immediate ring" to the called line. The ringing circuit and a path to the called line through a wire junctor are then selected. A talking path through the circuit junctor is reserved to the called line. Peripheral Order Buffer instructions are then given to connect the ringing circuit, to control the ringing circuit relays in the proper sequence to allow pretrip tests and coded ringing (either ac-dc or superimposed) to the tip or ring side of the line, and to apply audible ringing tone to the called line through a relay in the circuit junctor. Tables A and B shows the ringing codes for 4-party and 8-party lines for ac-dc and superimposed ringing.

Reverting Call

3.10 The No. 2 ESS processes the reverting call as a regular originating call until it receives seven dialed digits and recognizes that the called and calling TENs are the same. This is the indication to the system that reverting call processing is required. Thereafter, the call is handled in one of four ways depending on options selected by the telephone company. These options are:

- Route reverting call to busy tone
- Route reverting call to assistance operator
- Route reverting call automatically using ac-dc ringing
- Route reverting call automatically using superimposed ringing

3.11 The following paragraphs describe each of these four methods of operation.

Route to Busy Tone

3.12 The telephone company may elect to deny this type of call and route all reverting calls to busy tone. After hearing the tone, the calling party is expected to go on-hook. When the line goes on-hook, the tone connection is released and the line idled. Local instructions may then direct the customer to dial the operator for completion of the call. This option would probably be used by metropolitan offices with few party lines.

Route to Operator

3.13 When this method is selected, the call is routed to an operator via a recording completing trunk. (A TSP/TSPS cannot handle this type of call.) The operator recognizes that assistance is required for the completion of the reverting call from either the identification of the trunk group or from the reception of an identification tone. The operator requests the called number from the calling customer and instructs the customer to hang up, wait long enough for the called party to answer, and then go off-hook. The operator then dials the called number over a toll switching trunk and applies ringing. When both parties go off-hook, conversation may begin and the call is supervised by the toll switching trunk. After both parties disconnect, the operator takes down the connection and the trunk is released.

Route Reverting Call Automatically Using AC-DC Ringing

(a) *2-Party Full Selective*

3.14 When a customer goes off-hook, a CDPR is connected via a path through the switching network to the customer line. A tip-party test is first made to determine which party (tip or ring) is off-hook, and then dial tone is returned to the customer. The directory number of the party to be called is then dialed. After dialing is completed, the CDPR is disconnected by system control, and a tone circuit is connected (via a network path) to the calling customer line to return busy tone. This is a signal for the customer to go on-hook. After the customer goes on-hook the tone circuit is disconnected and the customer line is connected, via a network path, to an SD-2H126 ringing circuit for reverting call ringing.

3.15 The required ringing states are selected and both the calling and called parties are rung alternately. The calling party is rung with a special reverting ringing signal and the called party with the regular ringing signal (code 1). Ringing is applied to the calling party first so that the calling party knows that ringing has started in case the called party answers on the first ring. See Figure 4A for the ringing sequence.

3.16 Ringing to both calling and called parties continues until either party goes off-hook and trips the ringing. Answer supervision is detected by system control and the ringing circuit is restored to the idle state. A circuit junctor is then connected, via a network path, to the customer line to provide talking battery and supervision. When the telephone stops ringing, the calling party, knowing the call has been answered, goes off-hook and the talking connection is complete.

3.17 System control restores the circuit junctor and line to idle when both the calling and called parties go on-hook. If the called party does not answer, the calling party goes off-hook momentarily to trip the ringing. The line and ringing circuit are then idled. If the called party does not answer and the calling party does not trip the ringing, the system control idles the line and ringing circuit after five minutes of ringing.

(b) ***4-Party Semiselective***

3.18 Reverting ringing for 4-party semiselective service is accomplished in the same manner as 2-party full selective service except for the following.

(1) A tip-party test is not made.

(2) A second ringing code (code 2) is needed to distinguish between parties on the same side of the line. See Figure 4B.

(3) The called party code is always applied on the side of the line as determined by the called directory number, and the special reverting ring code is always applied to the opposite side of the line to signal the calling customer. When parties on the same side of the line call each other, the calling party hears the code of the called party and not the special reverting code. Customers on the opposite side of the line hear the special reverting ring code but ignore the signal, as neither of them would have originated the call.

Route Reverting Call Automatically Using Superimposed Ringing

(a) ***2-Party Full Selective***

3.19 Reverting ringing is accomplished in the same manner as ac-dc ringing for 2-party full selective, except that the calling and called customers are rung with code 1. See Table B and Figure 5A.

(b) ***4-Party Full Selective***

3.20 When a customer goes off-hook, a CDPR is connected via a path through the switching network, to the line, and then dial tone is returned to the customer. The directory number of the party to be called is then dialed. After dialing is completed, a second dial tone is returned. This signals the calling party to dial an identification digit (2-5) which identifies the calling party number to system control (so that the ringing code of the calling party can be determined). After this digit is dialed, the CDPR is disconnected and a tone circuit is connected via a network path to the customer line to return busy tone. This is a signal for the customer to go on-hook. The tone circuit is then disconnected and the customer line is connected, via a network path, to an SD-2H126 ringing circuit for reverting call ringing.

3.21 The required ring-trip detector and ringing states are selected, and both the calling and called parties are rung alternately with their regular ringing codes (code 1). Ringing is supplied to the calling party first, to indicate that ringing has started in case the called party answers on the first ring. The time relation of applying the reverting ringing codes is shown in Figure 5A.

(c) ***8-Party Semiselective***

3.22 Reverting ringing of 8-party semiselective customers is accomplished in the same manner as 4-party full selective customers with the following exceptions.

(1) A second ringing code (code 2) is needed to distinguish between parties on the same side of the line and of the same polarity.

(2) When parties on the same side of the line and of the same polarity call each other, only the code of the called party is applied to prevent confusion. If the code of the calling party were applied, each party would hear both codes. The time relation of applying the reverting ringing codes is shown in Figure 5.

(3) The party identification digit may be any digit from 2 through 9.

3.23 Figure 6 illustrates the network connections involved in a reverting call. Figure 7 is a functional flow diagram of the overall sequence of events involved in 2-party and multiparty reverting calls.

SOFTWARE DATA STRUCTURES

3.24 Translation and office parameter areas that must be considered when implementing 2-party or multiparty service are covered in the TG-2H Translation Guide. A summary of the required items is as follows:

- OFFOP0 office option word. Various bits within this word specify the ringing plant options (i.e., if superimposed ringing is provided) and the type of revertive call handling (manual or automatic). Input data for this word is provided to the system by completing ESS Form 2500-1. See Figure 8A.

- If manual (operator) handling of reverting calls is specified, Route Index 013 of the Route Index Expansion Table (ESS Form 2303-1) must be completed. This Route Index is also used by the generic program to route all 2-party message rate reverting calls to an operator trunk group. See Figure 8B.

- If operator revertive call completion is specified via Route Index 013, an operator trunk group must be defined by completing ESS Form 2201 Trunk Assignment Table, ESS Form 2202-3 Trunk Group Table, and ESS Form 2204 Trunk Feature Table. This set of data is used to specify the hardware and operating features of the operator trunk group.

- If 4- or 8-party service or automatic multiparty reverting ringing is provided, trunk group 007 must be defined (as a service circuit) in the Trunk Group Table (2202-1) and the Trunk Assignment Table (2201). This sets up the service circuit group containing the Special Ringing Circuits (SD-2H126) required for reverting ringing. See Section 232-190-024 and the Translation Guide TG-2H for specific details on providing the software for these items.

3.25 An office data administration (ODA) run is necessary to input translation data and office option data to the No. 2 ESS.

HARDWARE

3.26 Hardware required for this feature is dependent upon the ringing requirements of the area to be served by the No. 2 ESS. Refer to Section 500-114-100 for station ringer requirements and limitations.

3.27 Part 10 of this section details the specific hardware items related to the Two-Party and Multiparty Service feature.

FEATURE ATTRIBUTES

4. APPLICABILITY

4.01 The Two-Party and Multiparty Service feature is provided on a per-system and per-line basis. Selection of ac-dc ringing allows 4-party semiselective service and selection of superimposed ringing allows 4-party full selective and 8-party semiselective service. Either manual or automatic completion of reverting calls may be provided.

5. LIMITATIONS AND RESTRICTIONS

5.01 Two-party and multiparty lines may not have custom calling features. Multiparty lines cannot be station identified for calls that require charging.

5.02 No message registers may be associated with 2-party and multiparty lines.

5.03 If for any reason a sleeve lead is needed, it must be applicable to all parties.

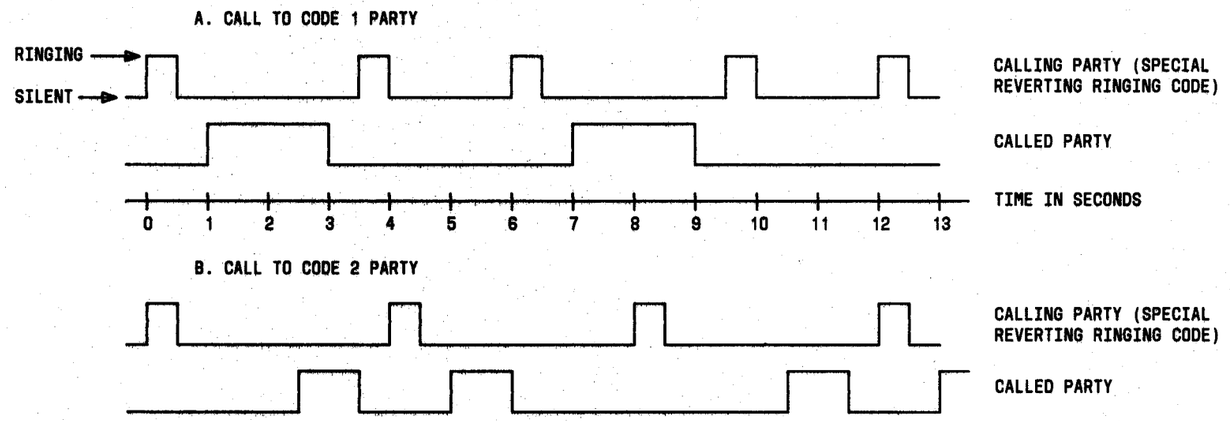

Fig. 4—AC-DC Reverting Call Ringing Sequence

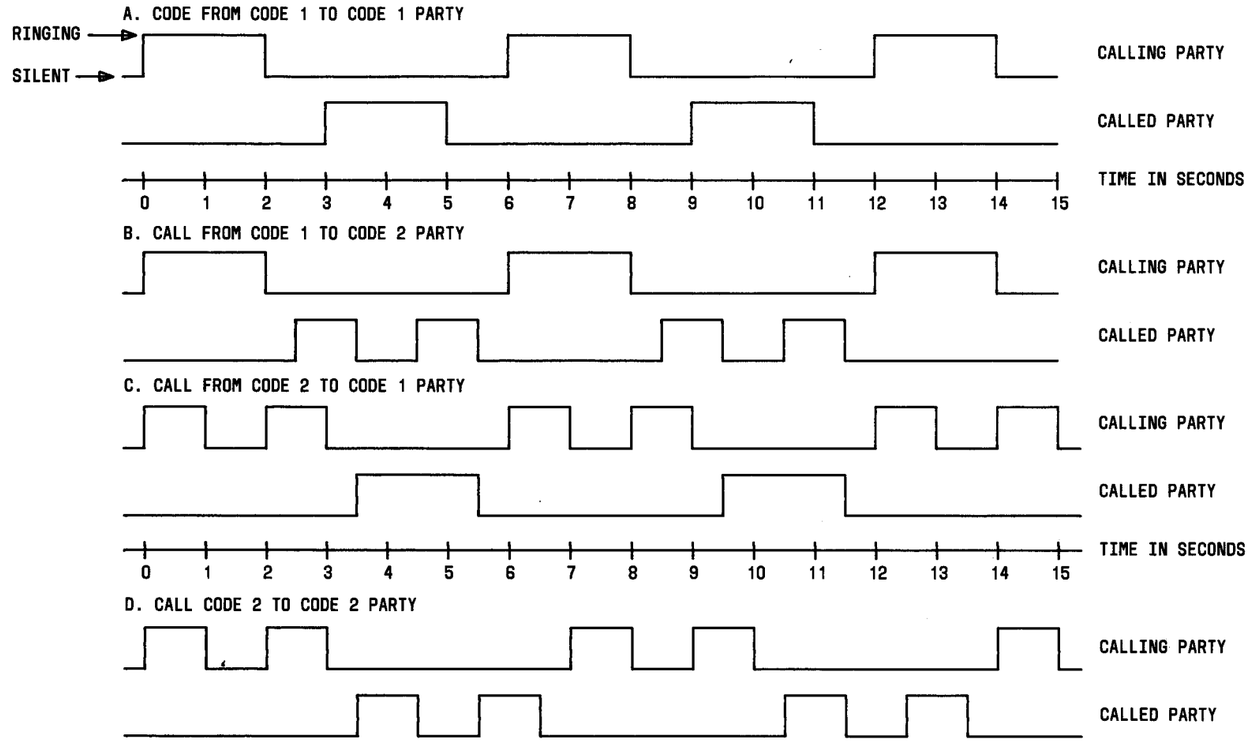

Fig. 5—Superimposed Reverting Call Ringing Sequences

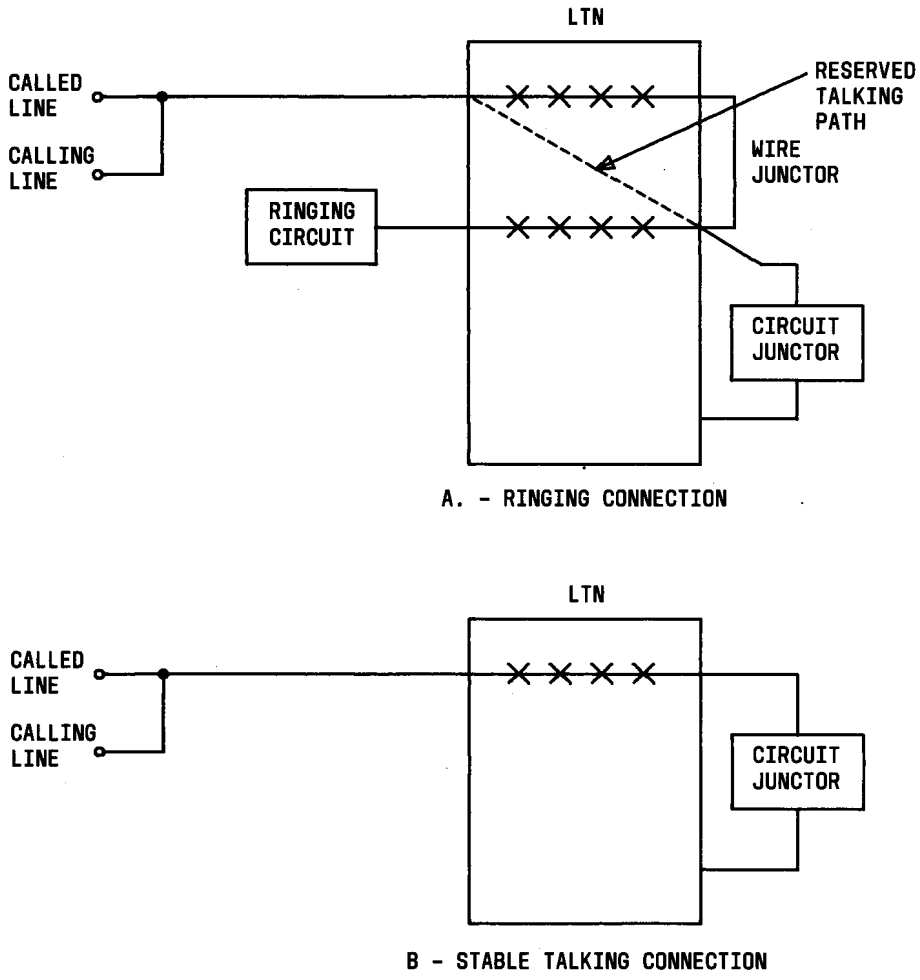

Fig. 6—Connection on Reverting Call

5.04 If the office has 2-party message rate service, reverting calls made by these customers must be handled manually (by an operator). A special route index (013) is reserved for this use. See Part 3 for details.

6. COMPATIBILITY AND INTERACTIONS

6.01 Telephone sets must be equipped with the appropriate type ringer for the various types of party line ringing. See Section 500-114-100 for the maximum number and the various types of ringers used in various service arrangements.

6.02 Range extension is possible with 2-party and multiparty service; however, there are limitations on the bridge tap and spacing of the party line customers. See Section 232-190-115 for details of range extension limitations.

6.03 All parties of a 4- or 8-party line must have the same originating major class.

6.04 The following is ***not*** allowed on any 2-party or multiparty line:

- Multiline Hunting
- Centrex Service
- Coin Service
- Series Completion
- Four- or Eight-Party Measured Service

- Custom Calling Features

6.05 If a call trace is initiated by an input message, and the line traced is a 2-party or multiparty line, the directory number printed as a result of the trace may not be the number of the party talking. The directory number printed is that of ***one*** of the parties on the line traced.

7. COST FACTORS

MEMORY

7.01 Translation words required per line for 2-party and multiparty service are as follows:

- 2-party service requires 5 words
- 4-party service requires 13 words
- 8-party service requires 21 words

PROCESSOR TIME

7.02 There is a negligible difference between the processor time required to process individual line calls and party line calls.

HARDWARE

7.03 The Ringing and Tone Plant (SD-81870-01) must be equipped with Y option if superimposed ringing is required.

7.04 If automatic reverting calling and/or multiparty ringing is required a quantity of SD-2H126-01 special ringing circuits must be provided.

8. AVAILABILITY

8.01 Two-party and multiparty features are available in all issues of the generic program.

CONSIDERATIONS FOR INCORPORATION OF FEATURE INTO SYSTEM

9. PLANNING

9.01 The ringing requirements of the area which the No. 2 ESS office is to serve must be taken into consideration. In an area where multiparty service is already established, the type of ringing presently used should be maintained whether it is ac-dc or superimposed.

9.02 In those cases where an office is to serve a new area and multiparty service is to be provided, it should be remembered that ac-dc ringing requires no extra circuits and fewer types of station ringers. However, superimposed ringing is less annoying to the customers in that they hear only their ring (2- and 4-party full selective) or at most only one other ring other than their own (8-party semiselective).

9.03 Special consideration must be given to customer training in the use of the reverting call portion of this feature. Also training in the identification of the various ringing codes used in multiparty service will be necessary.

10. HARDWARE

10.01 Each 2-party or multiparty line requires one TEN on the No. 2 ESS line and trunk switching network. Two, four, or eight customers may be assigned to each TEN.

10.02 The Ringing and Tone Plant (SD-81870-01) always comes equipped with the Z option which provides ac-dc ringing. If superimposed ringing is required, the Y option must be added to the Ringing and Tone Plant.

10.03 Refer to Section 500-114-100 for station ringer requirements and limitations. Also, see Section 232-190-146 Ringing Features for details on the various types of ringing and ringing circuits available.

10.04 Two SD-2H116-01 regular ringing circuits (Trunk Order Code [TOC] 61266 or 61267) are provided per unit which requires one mounting plate space on the miscellaneous trunk frame. The Z option should be provided in offices having the EF-1 and later generic programs.

10.05 One SD-2H126-01 (TOC 62208 or 62209) or one SD-2H126-02 (TOC 67366 or 67367) special ringing circuit is provided as a one-circuit unit requiring one mounting plate space on the miscellaneous trunk frame. If superimposed ringing is provided, option Y must be provided and option Z straps must be removed.

10.06 If operator handling of reverting calls is required, use either SD-2H105 (TOC 20301 or 20321) or SD-2H110 (TOC 40701) trunk circuits. See Section 232-190-024 and the Trunk and Serivce

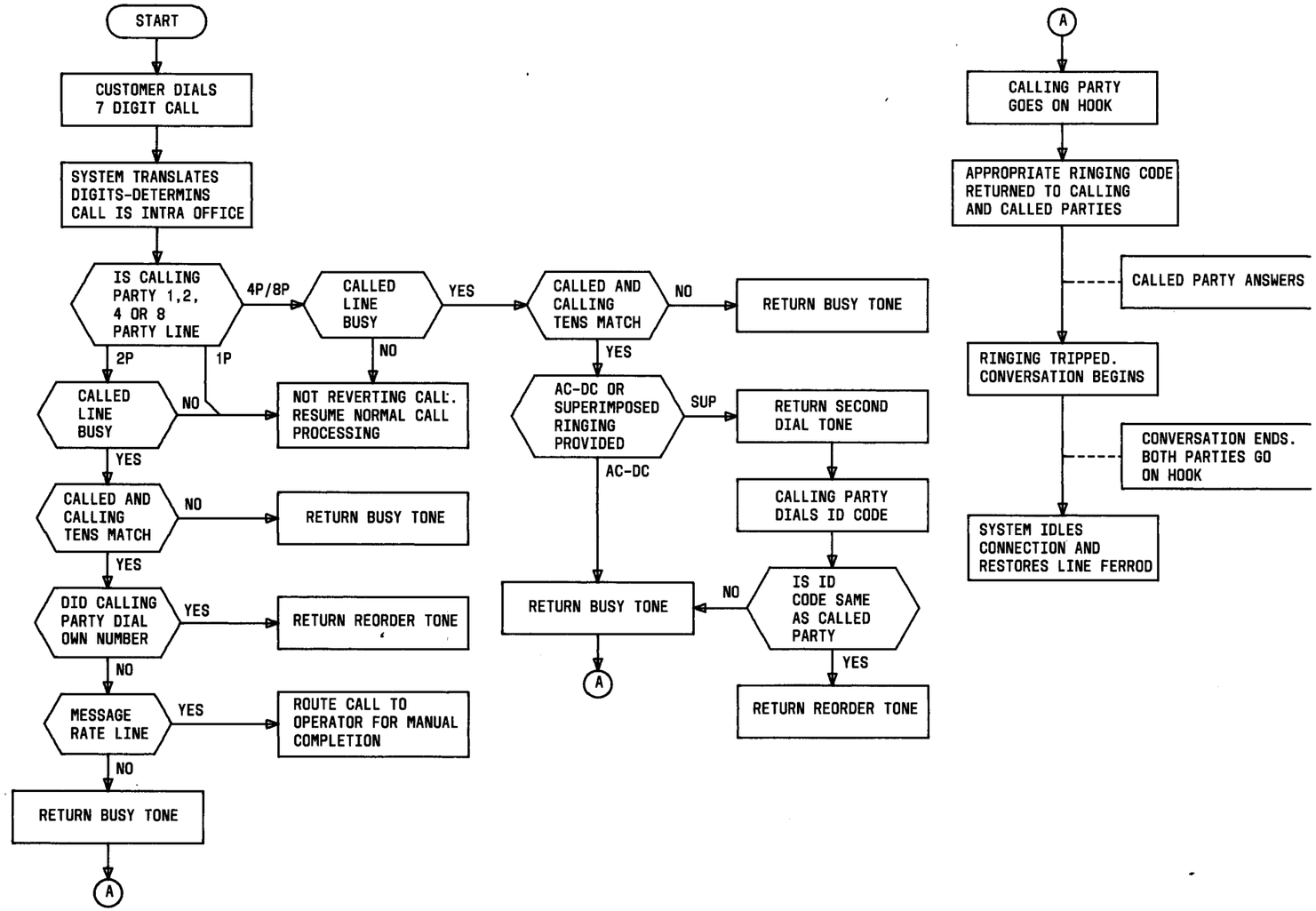

Fig. 7—Reverting Call Flow Diagram

A. OFFICE OPTION WORD 0

BIT 1 = 1, 2 = 0 ROUTE REVERTING CALLS TO BUSY TONE
BIT 1 = 0, Z = 1 ROUTE REVERTING CALLS TO OPERATOR
BIT 3 = 0 OFFICE HAS AC-DC PARTY RINGING
BIT 3 = 1 OFFICE HAS SUPERIMPOSED PARTY RINGING
BIT 6 = 0 OFFICE DOES NOT HAVE SUPERIMPOSED RINGING OPTION
BIT 6 = 1 OFFICE HAS SUPERIMPOSED RINGING OPTION

B. ROUTE INDEX EXPANSION

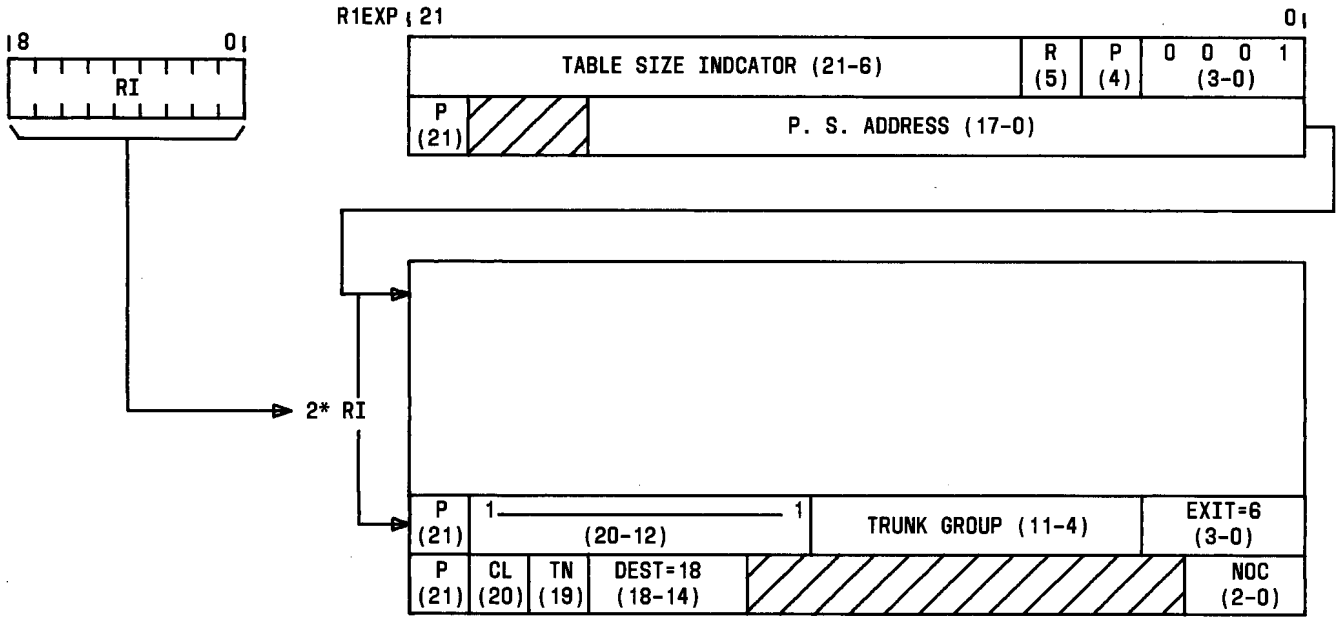

Fig. 8—Reverting Call Translation Items

Circuit Engineering Specification J2H031A-1 for determining the proper use and selection of these circuits.

11. DETERMINATION OF QUANTITIES

11.01 No extra quantities of standard hardware are required to provide this feature.

11.02 Refer to Part 7 for quantities to be used in determining memory requirements.

11.03 Refer to Traffic Facilities Practices (TFP) Division D, Section 12 for determining quantities of ringing circuits and reverting call operator trunks.

12. ASSIGNMENTS AND RECORDS

Assignments Recommendations and Guidelines

12.01 Refer to Part 5 (LIMITATIONS AND RESTRICTIONS) of this section for assignment recommendations.

Input and Record Keeping

A. Office Forms

12.02 The following Translation Input Forms are affected by this feature and should be considered when submitting to the WECo Regional Center for the initial ODA run. Refer to TG-2H for details and other information required to complete these forms:

FORM	TITLE
2100	Directory Number Table
2201	Trunk Assignment Table
2202	Trunk Group Table
2301	Rate and Route Table
2303	Route Index Expansion Table
2306	Line Class Code Table
2500	General Information Table

B. Recent Change (RC) Messages

12.03 Information on ESS form 2100 is recent changeable (using the A RC:L/ message) and effective immediately after the RC message is accepted by the system. See the sections covering line recent change procedures (listed in Part 19) for details.

12.04 In addition, changes to routing, charging, and trunk group translations may be made using the following RC messages:

A RC:DIG	Used to make changes in the 3- and 6-Digit Translator
A RC:GRP	Used to change single translation words in trunk or service circuit group tables applicable in EF-1 and later generics only.
A RC:RI	Used to change a Route Index
A RC:TRK	Used to change data associated with trunk groups.

12.05 The RC:DIG and RC:RI messages are recent change hunted when the A RC:RCH message is typed after a particular RC is inputted. See IM-2H200 for details.

C. Record Keeping

12.06 The following translation administration records should be maintained by the operating company after each ODA run:

- ESS 2202-R Trunk Group Record
- ESS 2201-R Trunk Assignment Record
- ESS 2500-5C-R Office Options Record
- ESS 2306-R Line Class Code Record.

12.07 In addition, the following records must be retained and updated manually:

- ESS 2100-R Directory Number Record
- ESS 2171-R Terminal Equipment Number Record.

D. Uniform Service Order Codes (USOC)

12.08 Table C lists the major recommended USOC codes to be used for this feature on ESS Form 2306. See the AT&T USOC Manual (Section A) for other less frequently used codes.

TABLE C

USOC CODES

CLASS OF SERVICE	USOC
TWO-PARTY FLAT RATE	2FR
FOUR-PARTY FLAT RATE	4FR
EIGHT-PARTY FLAT RATE	8FR
TWO-PARTY MEASURED RATE	2MR

13. NEW INSTALLATION AND GROWTH

13.01 The software part of this feature is available with all versions of the No. 2 ESS system program. The translation changes required to install or add to the multiparty feature are made by using the forms and/or RC messages listed in Part 12.

13.02 Hardware changes required for installation or growth of the multiparty feature require installation of the proper type of ringer in the customer's stations according to the limitations covered in Section 500-114-100.

14. TESTING

14.01 Testing individual lines is accomplished by RC verification of translation changes and by placing test calls to verify that the proper ringing sequence occurs for regular and reverting calls.

14.02 Ringing circuits are tested by system diagnostic programs utilizing the SD-2H135 Ringing and Coin Control Test Circuit. This test checks the ability of the ringing circuits to output the proper ringing codes and voltages.

15. MEASUREMENTS

15.01 The usual peg count, usage, overflow, and maintenance busy traffic measurements are available for the trunks and service circuits associated with this feature. In addition, the Customer Line Usage Measurements feature of the Traffic and Plant Measurement Program (PD-2H116) can be used to measure usage or individual lines including coin lines. Up to 64 lines of all types can be measured at any one time. See Section 232-120-301 Traffic and Plant Measurements for details.

16. CHARGING

16.01 Automatic Message Accounting (AMA) is the standard method of charging for toll calls in No. 2 ESS. Each party on a 2-party line can be identified and its calls recorded via AMA. If the office is not equipped with AMA, charging must be handled by routing toll traffic through a 3CL switchboard, CAMA, or TSP/TSPS office. In this case, identification of the calling party is made manually by the operator. Four- and eight-party toll calls must be routed to either CAMA or TSP/TSPS since the No. 2 ESS cannot identify the calling party. Reverting calls made by 2-party message rate customers must be completed and charged by an operator.

SUPPLEMENTARY INFORMATION

17. GLOSSARY

17.01 The following list identifies terms used in this document.

- AC-DC Ringing—20 Hz of 86 ±2 Vac in series with -42.75 to 52.5 Vdc.
- Centralized Automatic Message Accounting (CAMA)—AMA recording equipment located in a centrally located office and records charging information for more than one local office.
- Customer Dial Pulse Receiver (CDPR)—Device that receives signals generated by the dial at a customer's telephone and passes the information on to the system control for processing.
- Direct Distance Dialing (DDD)—The automatic establishing of toll calls in response to signals from the calling device of the originating customer.
- Office Data Administration (ODA) Run—Mechanism by which translation information may be assembled or changed for a No. 2 ESS. Information from the ESS input forms is inputted into the regional ODA computer, assembled, then sent back to the No. 2 ESS.
- Operator Number Identification (ONI)—Calls requiring charging are routed through the CAMA operator.
- Peripheral Order Buffer (POB)—A call store memory area to hold network and peripheral orders prior to execution by the system input/output programs.
- Recent Change (RC) Messages—Mechanism for making changes to information stored in the program store. These changes are accomplished via TTY input messages and are stored in the recent change area of call

store until some later time when the program store can be updated.

- Reverting Calls—Calls between two customers served by the same 2-party or multiparty line.

- Full Selective Ringing—Party-line ringing in which only the ringer of the desired main station responds.

- Semiselective Ringing—Party-line ringing where the ringers of only two of the main stations respond simultaneously, differentation being by the number of rings.

- Superimposed Ringing—20 Hz of 86 ±2 Vac in series with ±38 Vdc. The station ringer rings only when the proper dc polarity is applied thus giving superimposed ringing its selectivity.

- Switchboard, 3CL—A local dial system switchboard at which are handled assistance calls, intercepted calls, and calls from miscellaneous lines and trunks. It may also be employed for handling certain toll calls.

- Terminal Equipment Number (TEN)—A 6-digit number representing the physical location of a line, link, trunk, or service circuit in the switching network.

- Transient Call Register (TCR)—A call store register designated for storage of information concerning calls in progress.

- Traffic Service Position System (TSPS)—An electronic stored program control system in a central location that provides operator and charging functions for associated offices.

18. REASONS FOR REISSUE

18.01 This is the initial issue of this document.

19. REFERENCES

19.01 The following documents may be referenced for supplementary information concerning the Two-party and Multiparty Service feature:

- Output Message Manual No. 2 ESS OM-2H200

- Input Message Manual No. 2 ESS IM-2H200

- Office Data Tables Layout Specification No. 2 ESS PA-2H200

- Translation Guide, TG-2H

- Traffic Facilities Practices No. 2 ESS TFP-Division D, Section 12

- Trunk and Service Circuit Engineering Specification J2H031A-1

- AT&T Uniform Service Order Code (USOC) Manual

- Traffic and Plant Measurements Program PD-2H116, PF-2H116, PR2H116.

- Ringing and Answer Detection Program PD-2H205-01, PF-2H205-01, and PR-2H205-01

- Outgoing Trunk Circuit, Switchboard 3CL CD-2H105, SD-2H105

- Two-Way Trunk Circuit, Switchboard 3CL CD-2H110, SD-2H110

- Ringing Circuit for Individual, Two-Party, Coin, and PBX Lines CD-2H116-01, SD-2H116-01

- Ringing and Coin Control Test Circuit CD-2H135, SD-2H135

- Ringing Circuit for Coded, Superimposed, Reverting, and Off- and On-Hook Ringback CD-2H126-02, SD-2H126-02

- Ringing and Tone Plant (841A) CD-81870-01 and SD-82870-01

- Section 232-118-102 Recent Change Procedures (Including Service Order)—Generic Program LO-1

- Section 232-118-103 Recent Change Procedures (Central Office Changes)—Generic Program EF-1—No. 2 and 2B

- Section 232-120-301 Traffic and Plant Measurements

- Section 232-190-024 Trunking Arrangements

- Section 232-190-115 Extended Range Features
- Section 232-190-146 Ringing Features
- Section 500-114-100 Ringing Limitations
- Section 690-536-010 ESS Service Order Procedures Using the Service Order Teletypewriter (Generic Program LO-1)
- Section 680-536-011 ESS Service Order Procedures Using the Service Order Teletypewriter (Generic Program EF-1)
- Section 812-015-170 Ringing Ranges and Ringing Bridge Limitations for Lines in Dial Offices