FEATURE DOCUMENT
TRAFFIC SERVICE POSITION
SYSTEM INTERFACE
NO. 3 ELECTRONIC SWITCHING SYSTEM

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INTRODUCTION

1. GENERAL INFORMATION

1.01 This section describes the hardware and software arrangements provided by the No. 3 Electronic Switching System (ESS) so that customer-dialed special toll calls such as person-to-person, collect, credit card, and charge to third party may be automatically routed to a Traffic Service Position System (TSPS) operator. These arrangements are provided by all issues of the generic programs for No. 3 ESS.

1.02 When this section is reissued, the reasons for reissue will be included in this paragraph.

1.03 Hardware required for but not exclusive to this feature includes MF transmitters and receivers, outgoing trunk circuits for high-low and reverse battery supervision (CPS-FB399 of SD-3H220), and/or 2-way trunk circuits for E&M supervision (CPS-FB382 of SD-3H220).

2. DEFINITION

2.01 The TSPS interface consists of a combination of hardware and software arrangements provided to establish compatibility between the No. 3 ESS and the TSPS. This arrangement is made so that toll calls and other operator assisted calls, originated from within the No. 3 ESS service area can be handled by the TSPS. The TSPS may be used to control the charging and billing of toll calls and to provide operator services. This interface also operates with the Traffic Service Position (TSP).

2.02 The TSPS may be used to provide a means for extending customer local and direct distance dialing (DDD) to include special toll calls, such as person-to-person, collect, credit card, and charge to third party. It also provides for coin station, 0- (dial 0), manual line calls, and calls requiring special toll billing (formerly known as QZ billing). Additionally, this arrangement can aid in the completing and recording of local and toll dial assistance calls. Operator assistance is needed to aid in the completion of these calls to assure recording correct charge data and to supervise coin deposits on toll calls originating from coin stations. This assistance may be furnished by operators at cordless positions under control of the TSPS.

2.03 Included in the types of calls which may be routed to TSPS are customer dialed 1+ noncoin calls and special toll calls of the following types:

- ***Noncoin—Person:*** paid, collect,* charge to third party, credit card, and special billing service calls
- ***Noncoin—Station:*** collect,* charge to third party, credit card, and special billing service calls
- ***Coin—Person:*** paid, collect,* charge to third party, credit card, and special billing service calls
- ***Coin—Station:*** paid, collect,* charge to third party, credit card, and special billing service calls
- ***Coin and Noncoin:*** dial zero (0-).

*Includes calls charged to third party, credit card, and special billing service calls per ***called*** party instructions.

Additionally, a TSPS trunk group may be used to provide the necessary operator assistance to complete calls originating from manual lines (such as those provided for handicapped customers). When this type of service is provided, a special originating major class (10) and a dedicated route index (11) are required in the No. 3 ESS.

2.04 Trunks are provided from the No. 3 ESS to the toll office with TSPS trunk circuits interposed in between the two offices as shown in Figure 1. These trunks may be considered as connecting the No. 3 ESS and the TSPS even though the ultimate connection is onward through the TSPS to the toll office. The TSPS provides the switching and control to the operator position through a bridged connection. When the operator functions are completed, the TSPS disconnects the operator and sets up the through connection to the toll office.

2.05 The TSPS times the call through the initial period and any overtime periods. It also provides supervision of both the calling and called parties until on-hook occurs. At that time, the TSPS causes the charging information for the call to be stored on a magnetic tape (if required), and finally the TSPS trunk circuit is returned to its

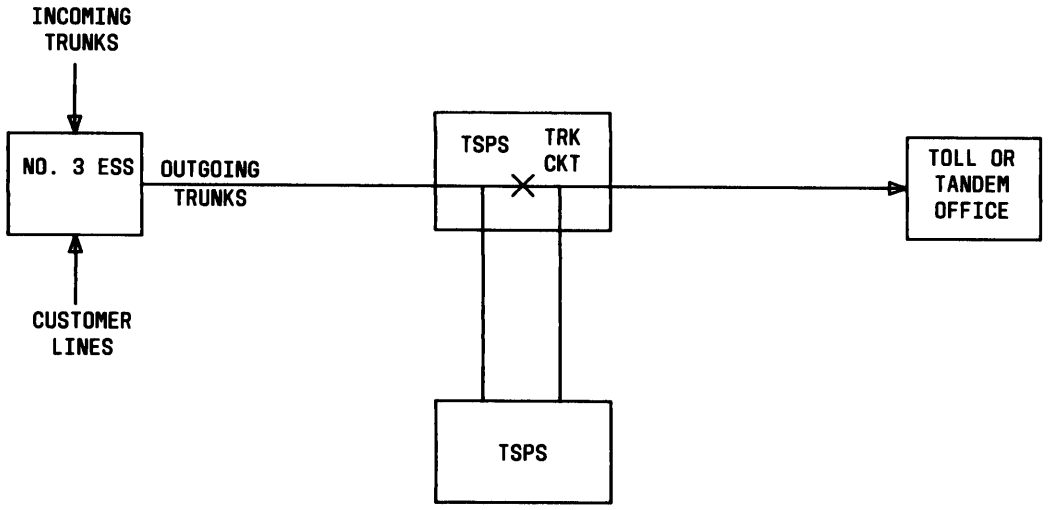

Fig. 1—Block Diagram of Connections Between No. 3 ESS and TSPS

idle state to enable the processing of a new call. Since the charging is handled by the TSPS, the call is marked free within the No. 3 ESS.

2.06 The No. 3 ESS must have the ability to perform several functions in order to be compatible with TSPS. These functions are as follows:

- Recognize a call requiring TSPS handling
- Recognize and outpulse the type of handling required (ie, whether or not operator assistance is required)
- Identify the calling party's telephone number (provided the calling party is not a PBX station or multiparty line)
- Outpulse the telephone numbers of the calling ***and*** called parties
- Outpulse pertinent information regarding the identity of the calling party (such as a hotel-motel customer or coin station)
- Receive and process commands from the TSPS to perform ringback, coin collect, and coin return operations.

2.07 The No. 3 ESS can route 1+, 0+, no prefix and 0- (dial zero) calls to TSPS via separate trunk groups, the same trunk group or any combination of trunk groups. The single group method (called a "combined coin/noncoin" group to TSPS) is recommended over the separate group method.

2.08 In addition, various combinations of coin, noncoin, and hotel-motel calls are allowed over the same No. 3 ESS trunk group to TSPS. For offices not arranged for Dial-Tone-First (DTF) coin, trunk groups can be set up to handle noncoin traffic only, coin first coin traffic only, or a combination of both types over the same trunk group. The latter is recommended. In offices arranged for DTF (+48 volts) operation, trunk groups may handle noncoin traffic only, coin traffic only (both coin first and DTF in the same group), or a combination of all three types over the same trunk group. Again, the latter is recommended.

2.09 The TSP (associated with crossbar tandem) performs the same functions as the TSPS except that it cannot perform timing and charging for 1+ noncoin calls. Also, the TSP requires that separate trunk groups be used for 0+ noncoin, 0+ coin, and 1+ coin calls. The No. 3 ESS generic programs do not distinguish between TSPS and the TSP; however, the translations must be properly engineered to accomplish the necessary trunking. The remainder of this document pertains to TSP as well as TSPS except where these differences apply.

DESCRIPTION

3. USER OPERATION

3.01 In order to complete a call through the TSPS office, the customer must perform the proper dialing requirements as established by the operating telephone company. Any of the following dialing procedures may be required for coin and noncoin originated calls.

- Dial 1, area code (if the call is to terminate outside the originating area code), office code, and telephone number
- Dial 0, area code (if the call is to terminate outside of the originating area code), office code, and telephone number
- Dial area code (if the call is to terminate outside of the originating area code), office code, and telephone number
- Dial 0 (no other digits required) for operator assistance.

In order to originate a call from a manual line, the customer simply goes off-hook.

3.02 When the call has been properly dialed, the TSPS operator is bridged onto the trunk (when operator assistance is required). At this time, the customer must provide the operator with the correct billing information. When this information has been obtained, the operator disconnects (except in the case of a person-to-person or collect call) and the call is allowed to complete through the toll or tandem office and onward through the network until it reaches the called party. When paying for a call at a coin station, the customer must have the proper change to deposit in the coin station when the operator indicates the amount of deposit required.

3.03 No actions are required on the part of the No. 3 ESS personnel in order to complete the customer's call to the TSPS. The TSPS operator actions must be consistent with the requirements of the TSPS office.

4. SYSTEM OPERATION

4.01 When a customer goes off-hook to make a call via TSPS, the origination process begins just as with any other call. A transient call record (TCR) is selected to monitor the progress of the call, the calling party's scan point number (SPN) is translated in order to identify the calling party, and the customer's dialed digits are stored in the TCR.

4.02 When dialing has begun, the 3-digit translator yields a code index based on the 1 or 0 prefix, or absence of prefix, area code (if present), and the office code dialed by the customer. This code index is expanded to obtain a screening table number and a direct route index. The screening table number is used to locate the proper screening table, and the calling party's screening class (obtained from the originating translations) is used to locate a particular entry of the screening table. This screening table entry provides the charge index and route index necessary to properly complete the call and provide the appropriate billing. If the route index provided by the screening table is 00, the direct route index is used to provide the necessary routing; however, if any other route index is provided by the screening table, the route index is used to route the call and the direct route index is ignored. For routes to TSPS, charge index 01 is provided to indicate that the call is free. The TSPS will record all the required toll charging information for billing purposes.

4.03 The route index is used to access a route index expansion. This expansion provides an entry type which defines the number of dialed digits expected (type 02 or 04 representing 10 digits and 7 digits, respectively). The route index expansion also provides the TSPS trunk group number.

4.04 The trunk group number is translated next so that an idle member may be selected. The trunk group translation table provides the largest member number, selection status block address, member list index, circuit code, and OTYP indicator (11 represents a TSPS trunk group).

4.05 The Two-way and Outgoing Trunk Circuit Status Block is accessed to select an idle member of the trunk group (by examination of the status bits) and to update the traffic information.

4.06 The member list index is used to access the member list. The selected idle member number (as determined by the selection status bits)

is used to index into the member list in order to locate the SPN and distributor triplet address (DTA) for the selected member. The SPN is then translated to obtain the terminal equipment number (TEN) of the selected trunk circuit.

4.07 When the TSPS trunk has been properly selected, a path between the calling party and the trunk circuit must also be selected. The DTA (obtained from the member list) is then used to place the trunk circuit in the bypass state and a multifrequency (MF) sender is selected and connected to the trunk circuit in order to outpulse the called party and calling party telephone numbers. (All communication between TSPS and No. 3 ESS is in the form of inband MF or multiwink signaling).

4.08 Next, the trunk seizure signal (off-hook), as shown in Figure 2, is sent to the TSPS to indicate that a call is in progress. An off-hook wink is returned from the TSPS to indicate that it is ready to receive the MF pulses. During heavy traffic conditions when MF senders are in demand, the No. 3 ESS waits a maximum of 4 seconds for the wink to be returned. During periods when MF senders are not in great demand, the No. 3 ESS waits a maximum of 10 seconds for the wink to be returned. Reorder tone is returned to the customer whenever the wink is not received within the allotted time interval.

4.09 If the start sending signal is received, the called number is retrieved from the TCR and outpulsed to the TSPS preceded by the keypulse (KP) signal and followed by the appropriate start code. (The frequencies sent to represent the information digits are shown in Table A.) The appropriate start code is selected on the basis of the first digit dialed by the customer and the type of line originating the call (coin or noncoin). The start code descriptions are given in Table B.

4.10 When the called number information has been received by the TSPS, an automatic number identification (ANI) signal (off-hook) is returned to the No. 3 ESS. Reorder tone is returned to the customer if this ANI signal is ***not*** received within 2 seconds. Upon reception of the ANI signal, the billing number is obtained through a translation process and outpulsed to the TSPS (refer to Part 16 for more details on billing arrangements). The outpulsing also indicates whether or not special toll billing (QZ) is required (refer to Section 233-190-109 for further details on special toll billing).

4.11 The billing number is then outpulsed preceded by an information digit (based on the lines originating translation) and the KP signal and followed by the appropriate start (ST) code. The information digit tells the TSPS what type of handling is required for the call. The possible information digits and their descriptions are given in Table C. If information digit 1, 2, 4, or 5 is present, no billing number is available; therefore, only the KP, information, and ST digits are outpulsed. The call is made stable and the TSPS operator is responsible for obtaining the necessary billing information. The TSPS then controls the call to completion.

4.12 If the calling party is a hotel or motel line, the TSPS is responsible for returning the charging information to the billing personnel at the hotel or motel when the call has been disconnected. This allows the hotel or motel personnel to bill the guests immediately without having to wait for the monthly bill.

4.13 A functional flow diagram describing the operations performed to place a call via TSPS is shown in Figure 3.

4.14 The TSPS operator can perform operator functions (such as coin collect, coin return, ringback, etc) for stable calls originated from the No. 3 ESS service area by initiating a series of events to be completed automatically by the TSPS. The TSPS first returns an on-hook wink (flash) to the No. 3 ESS to indicate that an operator signal is forthcoming.

4.15 One of three signaling arrangements may be provided for supplying operator signals to the No. 3 ESS. Through the use of inband signaling, the TSPS may return MF tones to represent the operator signals. In this case, the No. 3 ESS must connect an MF receiver to the trunk circuit upon detection of the initial flash. The TSPS then sends the information digit (900 ms of MF tone) associated with the desired function. The information digit is received by the MF receiver and decoded so that the proper service circuit (coin control or ringing circuit) may be connected to the customer's line to perform the desired function.

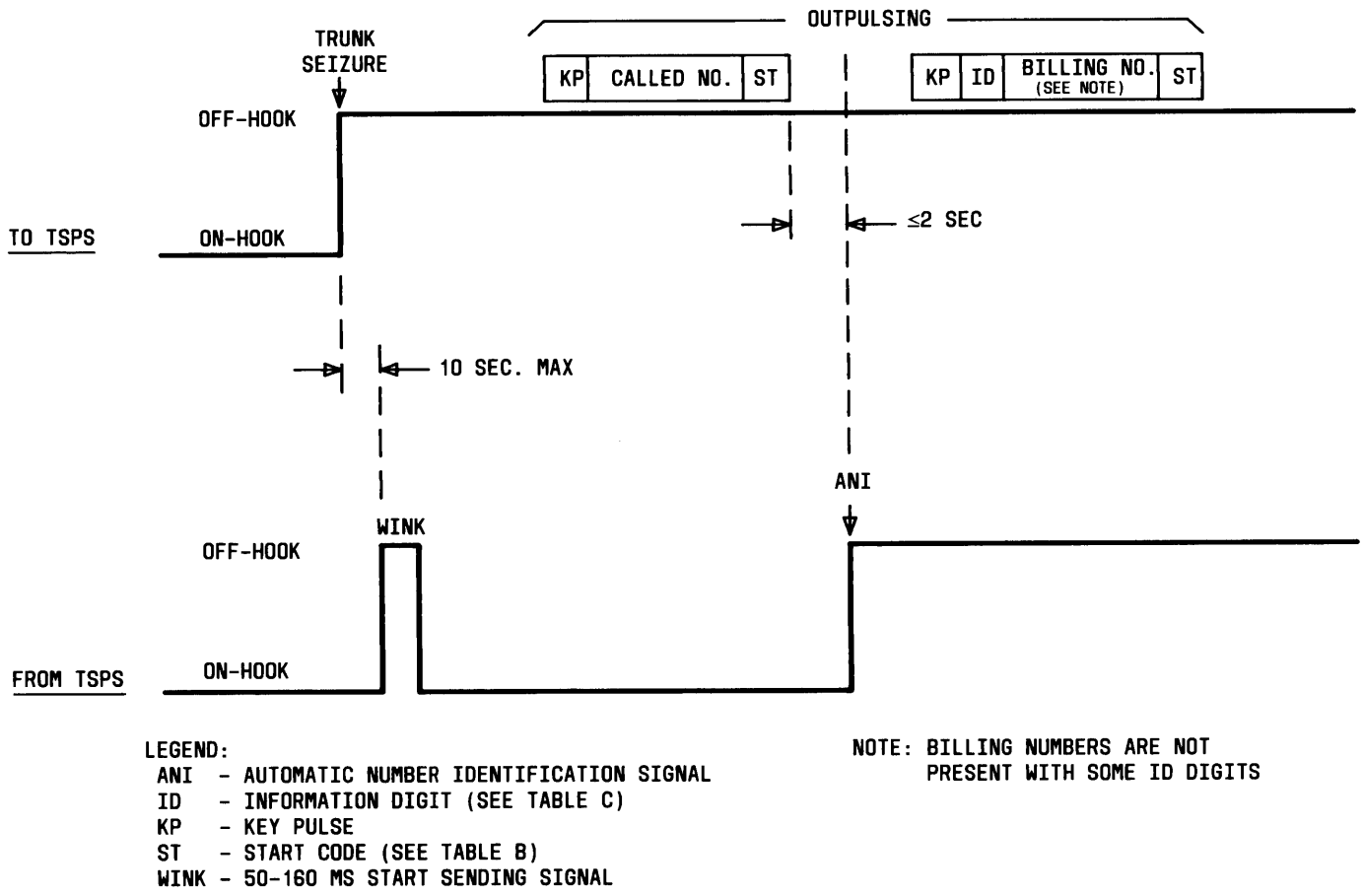

Fig. 2—Signaling to and from TSPS on Calls from No. 3 ESS to TSPS

4.16 For the second signaling arrangement, called multiwink signaling, the TSPS returns a series of multiple winks which represent the individual operator signals. In this case, the No. 3 ESS must only count the number of winks to determine the required action. Table D lists the operator actions and indicates the type of signal required for both signaling arrangements. On trunks arranged for noncoin only, a single flash is used to request an operator ringback.

4.17 Finally, the 3E3 generic program provides the capability to communicate with the TSPS through the use of Expanded Inband Signaling (EIS). This signaling method provides the ability to recognize a lengthened flash (325 to 425 ms) from the TSPS in order to eliminate missed inband flashes and to screen out hits which result in the unnecessary connection of MF receivers. This requires that the TSPS trunk circuits be placed on the slow-scan list instead of the fast-scan list as required for inband signaling. As with inband signaling, an information digit is transmitted from the TSPS to request the desired function; however, the MF tone duration for EIS is 480 to 700 ms. In addition to the coin collect, coin return, and ringback signals provided by inband signaling arrangements, EIS provides the ability to recognize the operator-attached and operator-released signals. These signals are required to implement new services such as Auto Bill Calling, Voice Storage Service, end-to-end signaling, etc. The operator-released

TABLE A

FREQUENCIES FOR MF PULSING

	700	900	1100	1300	1500
900	1				
1100	2	3			
1300	4	5	6		
1500	7	8	9	0	
1700	ST3P	ST1P*	KP	ST2P	ST

* Sometimes labeled STP

TABLE B

START CODE DESCRIPTIONS

START CODE	OPERATOR ASSISTED	LINE TYPE	DESCRIPTION FIRST DIALED DIGIT
ST	YES	COIN	1,2—9 (for 1+ or no prefix calls, respectively)
ST1P*	YES	COIN	0 (for 0+ or 0— calls)
ST2P	NO	NONCOIN	1,2—9 (for 1+ or no prefix calls, respectively)
ST3P	YES	NONCOIN	0 (for 0+ or 0— calls)

* Sometimes labeled STP

and operator-attached signals allow the use of the TOUCH-TONE® pad from a Dial-Tone-First (DTF) coin station after a connection has been made to the TSPS trunk. Upon reception of the operator-attached or operator-released signal (see Table D), the No. 3 ESS applies +48 volts or -48 volts, respectively, to the coin line. This allows the operator to monitor for coin deposits at the appropriate stages of the call (operator-attached) and then release (operator-released) to allow subsequent use of the TOUCH-TONE pad. Additional details concerning the treatment of coin lines as a result of these signals can be found in Section 233-190-131.

4.18 Upon completion of a TSPS-involved call, the TSPS operator may recall the calling

TABLE C

INFORMATION DIGIT DESCRIPTION

INFO DIGIT	DESCRIPTION
0	Calling party is identified
1	Calling party not identifiable (trunk, PBX or multiparty line, QZ, etc)
2	Calling party not identified due to a trouble
3	Calling party identified and service observed
4	Calling party not identifiable—service observed
5	Calling party not identified due to trouble—service observed
6	Calling party identified and is a hotel or motel (originating major class—09)

party (eg, to provide billing information if previously requested). In the SO-2 generic program, if the calling party is a 2-party or multiparty line, the ringback initiated by the operator causes all parties to be rung. The 3E3 generic program has no provision for applying ringback to multiparty lines (with the exception of calls involving the 911 feature); however, the party number for 2-party customers is remembered in case a ringback is required. If a ringback is required, only the appropriate party is rung.

4.19 When manual line treatment is required, the customer's originating translation yields an originating major class of 10. This major class is used only for manual lines. The system then automatically routes the call to TSPS via route index 11. Since the customer dials no digits, the call arrives at the TSPS as a 0- (dial 0) call. The TSPS operator then routes the call in accordance with the customer's wishes.

CHARACTERISTICS

5. FEATURE ASSIGNMENT

5.01 The TSPS interface is provided on a per-system basis in all generic programs of No. 3 ESS.

6. LIMITATIONS

6.01 The TSPS requires that outpulsing from the No. 3 ESS be in the form of MF encoded digits.

6.02 A maximum of 10 digits for the called number and 7 digits for the billing number may be outpulsed to the TSPS.

6.03 The No. 3 ESS waits a maximum of 4 seconds for the wink start signal during heavy traffic conditions and up to 10 seconds during light traffic conditions. The ANI signal must be returned by the TSPS in 2 seconds or less. Reorder tone is returned to the customer if these signals are not received within the allotted time intervals.

7. INTERACTIONS

7.01 This feature was designed in order to make the No. 3 ESS compatible with the TSPS. Although No. 3 ESS cannot automatically identify the calling party when the call originates from a PBX station or from a multiparty line, the TSPS operator is notified to verbally obtain the customer's billing number.

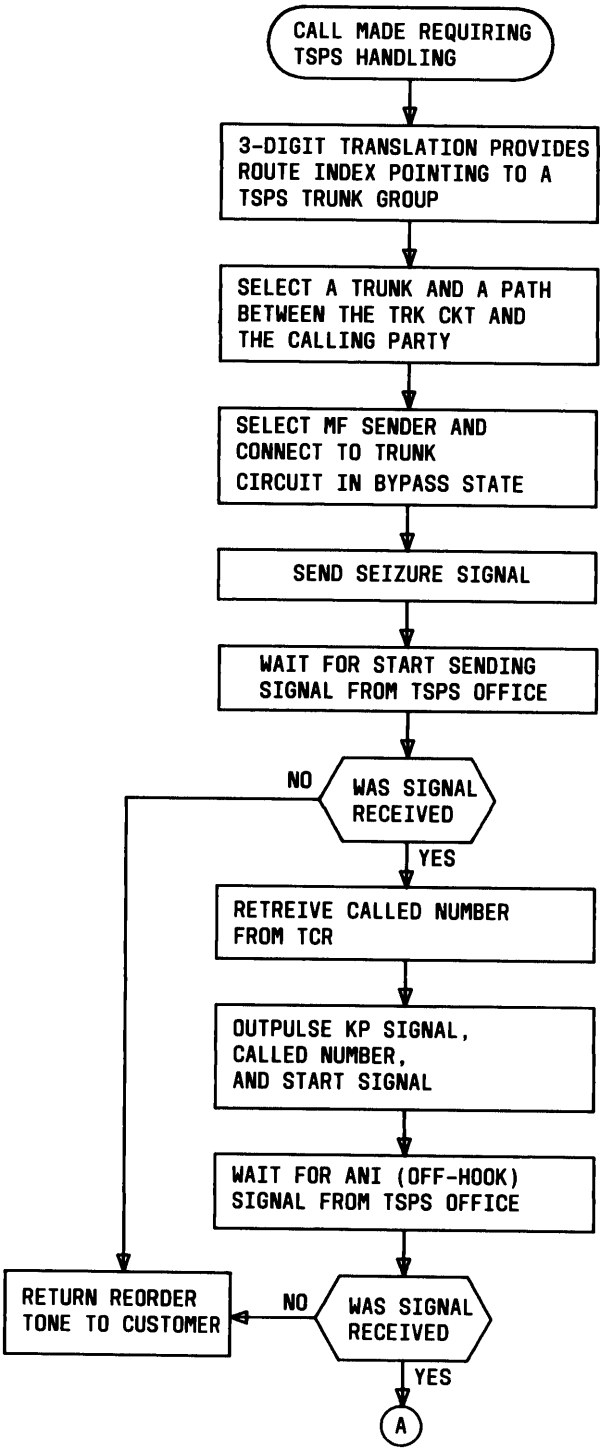

Fig. 3—TSPS Interface Flowchart (Sheet 1 of 2)

7.02 Customers subscribing to the Call Forwarding feature are not permitted to forward calls via TSPS trunks.

7.03 During the progress of a normal 2-party call, either party may flash to recall the operator (eg, to obtain billing information for the call in progress). In the SO-2 generic program, if a Threeway Calling customer flashes to recall the operator, a connection to a conference circuit is established instead of to the operator. The 3E3 generic program provides a special dialing code to resolve this problem. In this case, the Threeway Calling customer flashes, receives the special dial tone (indicating a successful connection to a conference circuit), and dials 110. The No. 3 ESS then checks to see if the other party is a trunk (indicating that the call involves TSPS or some other toll facility). If not, operator recall is not possible and the customer is given a custom calling error announcement. If the other party is a trunk, the No. 3 ESS transmits a flash of 500 ms over the trunk to the TSPS office. The conference circuit, associated paths, and the flasher-to-CDPR connection are idled and the original talk path is restored. At this point, the Threeway Calling customer may talk to the other party and the operator position is either already attached to the connection or is still being rung. The Threeway Calling customer is not allowed to use this procedure to recall the operator while involved in a conference call.

7.04 The TSPS interface also handles all international calls made utilizing the International Direct Distance Dialing (IDDD) feature. When an international call is dialed, the generic program (3E3 or later) recognizes the first two digits of the IDDD prefix (01) and automatically accesses the IDDD translator. This translator looks at the next dialed digit to determine the type of IDDD call in progress. If the next digit is a 0 indicating an international 0- call, no more digits are expected and the call is routed to the TSPS operator. If the third dialed digit is a 1, indicating an international station-to-station call (not requiring the assistance of an operator), the IDDD translator examines the digits following the prefix one at a time to identify a valid 1-, 2-, or 3-digit country code. A code index is then provided which leads to the appropriate disposition of the call (via the appropriate TSPS trunk group). If the third dialed digit represents the first digit of the country code (some digit other than 0 or 1), an international 0+ call is indicated. Again, the country code is translated and the appropriate code index is provided. The start code is then determined and outpulsed to the TSPS as previously described. When the ANI

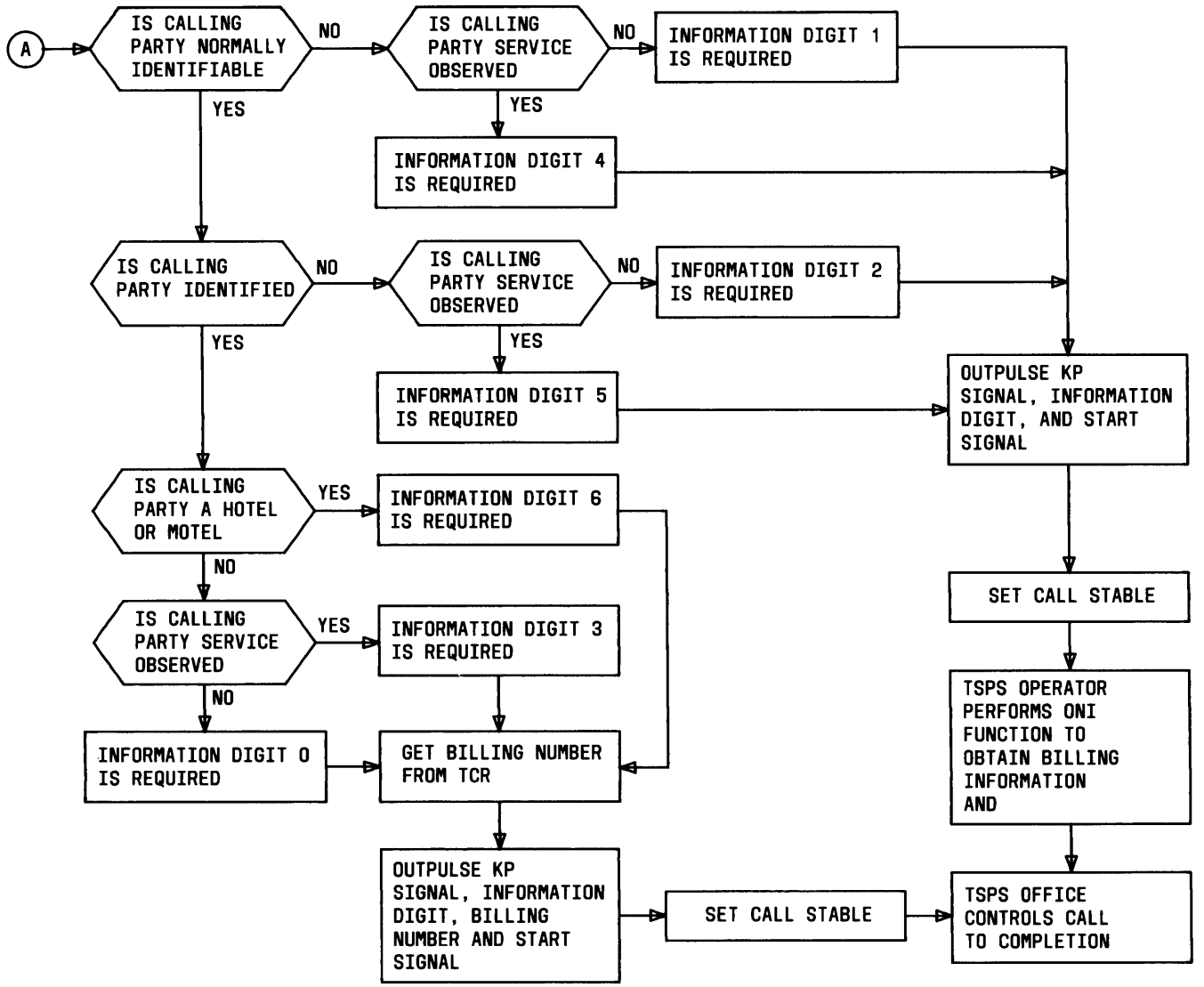

Fig. 3—TSPS Interface Flowchart (Sheet 2 of 2)

signal is received from the TSPS, the billing number is outpulsed in the same manner as a domestic call. The TSPS is then responsible for routing the call and recording the necessary billing information. Refer to Section 233-190-503 for further details regarding the IDDD feature and for details concerning outpulsing to TSPS for the IDDD feature.

7.05 Additionally, the TSPS interface, as provided by the 3E3 generic, may be used to process calls originated from Charge-a-Call stations. Charge-a-Call stations are coinless public telephones which allow the origination of calls not normally requiring coin deposits (eg, operator, 0+, overseas operator, international 0+, calls to toll-free INWATS numbers, local and long distance directory assistance, emergency service bureau, etc). When a call of this type is originated from a Charge-a-Call station (having an originating major class of 11), information digit 7 (ANI-7) is outpulsed to the TSPS preceding the calling stations telephone number. The TSPS then performs additional screening and routes the call to an operator position for further processing.

8. RESTRICTION CAPABILITY

8.01 Not applicable.

TABLE D

OPERATOR SIGNALS

OPERATOR ACTION	NUMBER OF MULTIPLE WINKS	MF SIGNALING DIGIT SENT TO NO. 3 ESS
Operator released	1	8 (3E3 only)
Operator attached	2	0 (3E3 only)
Coin collect	3	2
Coin return	4	KP
Ringback	5	ST3P

INCORPORATION INTO SYSTEM

9. COST FACTORS

A. Software Costs

9.01 The software required to interface the No. 3 ESS and the TSPS is provided by the generic program. Any current issue of the generic program can provide this feature.

B. Hardware Costs

9.02 Hardware items that must be considered when providing this feature are:

- Outgoing trunk circuits for high-low and reverse battery supervision (SD-3H220-01, CPS-FB399)
- Two-way trunk circuits for E&M supervision (SD-3H220-01, CPS-FB382)
- MF transmitters
- MF receivers (for coin control and ringback functions).

Although none of these hardware items are exclusive to TSPS calls, they are essential to them and this fact should be considered in the overall composition of the No. 3 ESS office.

10. DATA ASSIGNMENTS AND RECORDS

10.01 The basic translation sequence required to complete a call to TSPS is shown in the translation layout of Figure 4. Each trunk group to TSPS must be accordingly represented by the OTYP indicator in the Trunk Group Translation table. Additionally, each trunk group to TSPS must be assigned the appropriate circuit code (2-way E&M trunks are represented by circuit code 1 and outgoing reverse battery high-low trunks are represented by circuit code 5).

10.02 Manual lines to be routed to TSPS (for handicapped customers, etc) must be assigned an originating major class of 10 and they must be routed via route index 11. Hotels and motels must be assigned to originating major class 09. This major class indicates to the TSPS (via information digit 6) that the toll charges must be reported to the hotel or motel personnel upon completion of a toll call placed by a hotel or motel guest. Lines involved in calling party screening at the TSPS must be assigned telephone numbers which may be coordinated with the screened numbers recognized by the TSPS.

10.03 Changes in the translation data can be made through the use of the recent change messages listed below.

- ***RC:CDI***—Used to associate prefix requirements (1, 0 or none), screening table, and direct route index with a code index

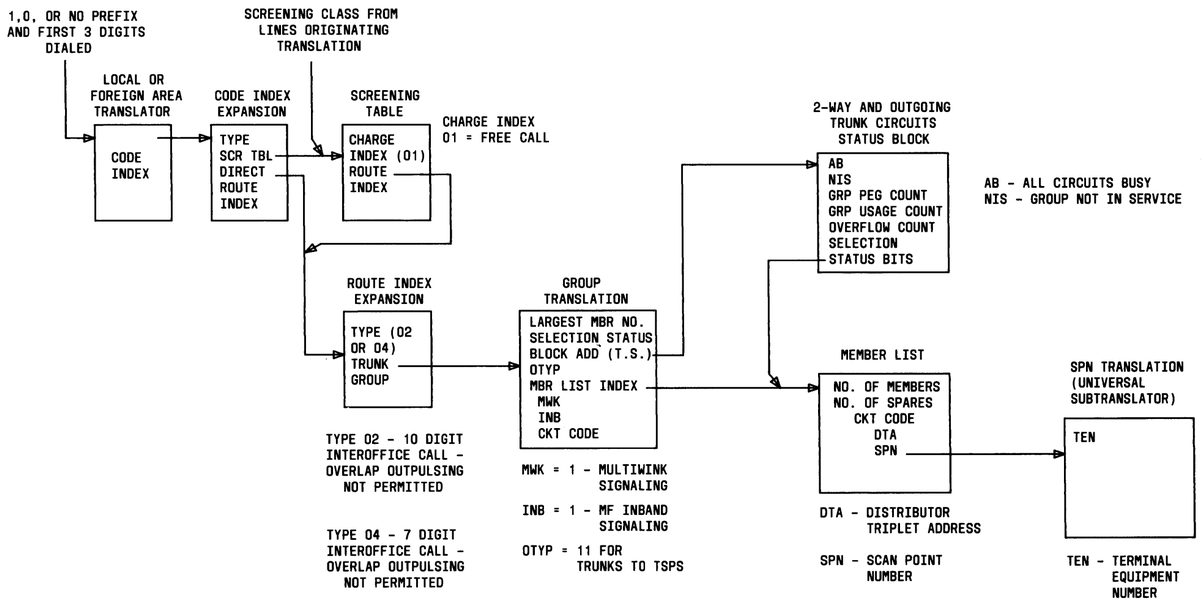

Fig. 4—Translation Layout for TSPS Interface

- ***RC:CKT***—Used to associate distributor triplet address and scan point number with a TSPS trunk

- ***RC:DIG***—Used to make changes in the 3-digit translator

- ***RC:GRP***—Used to change data related to trunk groups

- ***RC:RTI***—Used to change a route index

- ***RC:CHI***—Used to assign the free charge index 001 to a TSPS trunk group

- ***RC:GTSA***—Used to assign a trunk to a traffic schedule

- ***RC:LCC***—Used to assign originating major classes to hotel/motel (09) and manual lines (10)

- ***RC:OFFICE***—Used to allow or deny 0+ calls originating from the No. 3 ESS service area.

Further details concerning these messages and their use can be found in IM-3H300 and the Recent Change Users Guide.

10.04 In the case of the initial installation, the following translation input forms must be completed and submitted to the WECo regional data center as a part of the office data administration (ODA) run. Refer to Translation Guide TG-3 for details concerning the completion of these forms.

- ***ESS 3100—Telephone Number Table***—Used to assign line class codes to directory numbers for hotels, motels, and manual lines for purposes related to TSPS

- ***ESS 3201—Trunk Assignment Table***—Used to associate scan points, circuit codes, and distributor triplets with TSPS trunk groups

- ***ESS 3202—Trunk Group Table***—Used to define a trunk group by providing the highest member number, traffic schedule, trunk group number, and circuit code

- ***ESS 3204—Trunk Feature Table***—Used to designate a trunk group as a TSPS group. MF outpulsing and MF or multiwink signaling are also specified here.

- ***ESS 3300—Three- and Six-Digit Translations***—Used as the starting point for establishing routing treatment for all 3-digit NXX and NPA codes and 6-digit NPA-NXX codes

- ***ESS 3301—Rate and Route Table***—Used to associate a charge index and route index with individual screening tables

- ***ESS 3303—Route Index Expansion Table***—Used to associate a route index with the TSPS trunk group

- ***ESS 3304—Code Index Table***—Used to associate a screening table and route index with a code index. This also specifies the type of prefixes which are allowed.

- ***ESS 3306—Line Class Code Table***—Used to assign originating major classes for hotels, motels, and manual lines.

10.05 If an initial ODA run is made to incorporate the TSPS interface, the resulting output forms should be retained as a part of the office records. Records for trouble reports and maintenance should be kept in accordance with local procedures.

11. HARDWARE RESTRICTIONS

11.01 Not applicable.

12. INSTALLATION/ADDITION/DELETION

12.01 The procedures for providing the interface with TSPS include making the proper trunk group assignments through the use of the recent change messages or the ODA run as previously mentioned. Adequate hardware units (MF transmitters, MF receivers, trunk circuits, etc) must also be provided. Procedures for determining the required quantities may be found in Bell System Practices, Sections 233-060-XXX.

13. TESTING

13.01 All trunks and service circuits associated with the TSPS interface feature can be tested at the No. 3 ESS using the maintenance TTY and the trunk and line test panel. Refer to

the No. 3 ESS TOP Maintenance Document, Section 233-142-100 for test procedures.

13.02 Tests to verify the translation information in the No. 3 ESS consist of the appropriate verify messages entered via the TTY. These messages are as follows:

- ***VER:CDI***—Used to verify code index assignments
- ***VER:CHI***—Used to verify the free charge index (001) for TSPS trunks
- ***VER:DIG***—Used to verify the code index associated with 3- or 6-digit codes
- ***VER:GRP***—Used to verify trunk group data
- ***VER:LCC***—Used to verify line class codes for hotels, motels, and manual lines
- ***VER:LSTRIG***—Used to verify all route indexes pointing to a TSPS trunk group
- ***VER:LSTTCI***—Used to verify all 3-digit codes pointing to a specified code index
- ***VER:RTI***—Used to verify route index entries.

Refer to IM-3H300 for information pertaining to the variable fields of these messages. OM-3H300 provides the interpretation for the response of these messages.

14. OTHER PLANNING TOPICS

14.01 Adequate TSPS trunks should be provided to meet the expected toll call demand. No other special planning considerations are necessary for this feature.

ADMINISTRATION

15. MEASUREMENTS

15.01 Peg count, usage, overflow, and maintenance busy traffic measurements are available for the trunks and service circuits associated with the TSPS interface feature. The details of these measurements can be found in Section 233-153-135. No other measurements are necessary for this feature.

16. CHARGING

16.01 All charging for calls routed through TSPS from No. 3 ESS is performed by the TSPS; however, the No. 3 ESS must outpulse the customer's billing number (when available) to the TSPS. This number may be the customer's listed directory number (LDN) or some other number as desired by the customer.

SUPPLEMENTARY INFORMATION

17. GLOSSARY

17.01 The following list defines abbreviations and terms which may be unfamiliar to the reader.

- ANI (Automatic Number Identification) Signal—An off-hook signal sent from the TSPS to the No. 3 ESS upon the reception of the called telephone number. The signal indicates that the TSPS is ready to receive the billing number.
- CAMA—Centralized Automatic Message Accounting
- DDD (Direct Distance Dialing)—Customer dialed toll calls.
- DTF (Dial-Tone-First)—A feature by which No. 3 ESS returns dial tone to a coin station before the initial deposit is made. The customer can then complete a call to any number which has been designated by the operating company as a free number without making an initial deposit.
- E and M Signaling—A technique for transferring supervisory information between a trunk circuit and a separate circuit over two leads designated "E" and "M". The "E" lead transmits to the trunk circuit and the "M" lead transmits to the signaling circuit.
- KP (Keypulse)—An MF signal transmitted to indicate the beginning of an MF encoded message (ie, a called or calling party telephone number).

- Manual Line—A customer's line (and originating major class) that is automatically routed to an operator upon detection of off-hook.

- MF Signaling (Multifrequency Signaling)—A method of sending numerical address information between telephone offices by sending simultaneously a combination of two tones out of a group of six frequencies (see Table A).

- ODA (Office Data Administration) Run—Mechanism by which software may be changed in the No. 3 ESS. Information from the ODA input forms are inputted into the regional ODA computer, then sent back to the No. 3 ESS.

- Off-Hook—The condition indicating that a station or trunk is in use (line loop closed).

- On-hook—The condition indicating that a station or trunk is idle (line loop open).

- ONI—Operator Number Identification

- OTYP—Designation used to indicate that a trunk group is being routed to TSPS or CAMA

- Outpulse—The process of sending called and calling party telephone numbers from the No. 3 ESS to the TSPS.

- QZ—Designation used to indicate whether a line has special toll billing (formerly known as QZ billing).

- Ringback—A signal used by a TSPS operator to call the calling subscriber after the completion of a toll call.

- SPN—Scan Point Number

- Start (ST) Pulse—An MF signal transmitted to indicate the end of an MF encoded message. TSPS processing begins with the reception of this pulse.

- TCR—Transient Call Record—A block of temporary storage assigned to monitor calls in a transient state.

- Tandem Office—A center used exclusively for the switching of calls between other central offices.

- TEN—Terminal Equipment Number

- TSP—Traffic Service Position

- TSPS—Traffic Service Position System

- Wink—A brief off-hook signal sent from the TSPS to the No. 3 ESS to indicate that the TSPS is ready to receive the called party telephone number.

18. REFERENCES

18.01 The following is a list of documents which may be consulted for further information related to this feature.

- PR-3H153—Digit Sending and Receiving Program (DIGPRO)

- PR-3H155—Digit Interpretation Progress Marks (DNTRP)

- PR-3H157—Equipment Selection Subroutines (EQPSEL)

- PR-3H159—Fast Trunk Scanning Program (FASTTK)

- PR-3H164—Operator Call Program (OPER)

- PR-3H165—Outgoing Trunk Program (OUTCAL)

- PR-3H166—Network Path Hunt, Busy, and Idle Program (PATHNT)

- Section 233-190-024—Trunking Arrangements No. 3 ESS

- Section 233-190-101—Charging Arrangements No. 3 ESS

- Section 233-190-131—Dial-Tone-First Coin No. 3 ESS

- Section 233-154-130—Recent Change Users Guide

- TG-3, Translation Guide

- Sections 233-060-XXX—Network Design Practices
- IM-3H300—Input Message Manual No. 3 ESS
- OM-3H300—Output Message Manual No. 3 ESS
- PA-3H300—Office Data Tables Layout Specification No. 3 ESS
- Section 233-152-135—Traffic and Plant Measurements No. 3 ESS
- Section 233-142-100—TOP Maintenance Document No. 3 ESS
- Section 984-100-100—Traffic Service Position System No. 1 General Description
- CD and SD-3H220-01—Universal Trunk Circuit