

**FEATURE DOCUMENT**  
**TRAFFIC SERVICE POSITION SYSTEM INTERFACE**  
**NO. 2 ELECTRONIC SWITCHING SYSTEM**

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**FEATURE DEFINITION AND DESCRIPTION****1. DEFINITION/INTRODUCTION****DEFINITION**

**1.01** The Traffic Service Position System (TSPS) interface consists of a combination of hardware and software arrangements provided to establish compatibility between the No. 2 Electronic Switching System (ESS) and the TSPS. This arrangement is made so that toll calls and other operator assisted calls, either originating at or passing through the No. 2 ESS, can be handled by the TSPS. The TSPS is 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).

**INTRODUCTION**

**1.02** The TSPS provides 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, message rate reverting, 0- (dial 0), manual line calls, and calls requiring special toll billing (formerly known as QZ billing). Additionally, this arrangement aids 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 calls originating from coin stations. This assistance is furnished by operators at cordless positions under control of the TSPS.

**1.03** Included in the types of calls routed to TSPS are customer dialed 1+ noncoin calls and special toll calls of the following types:

- **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.
- 1.04** Trunks are provided from the No. 2 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. 2 ESS and the TSPS even though the ultimate connection is onward through the TSPS to the toll office. The TSPS only 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.
- 1.05** 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, and finally the TSPS trunk circuit is returned to its 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. 2 ESS.
- 1.06** The No. 2 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 (i.e., whether or not operator assistance is required)

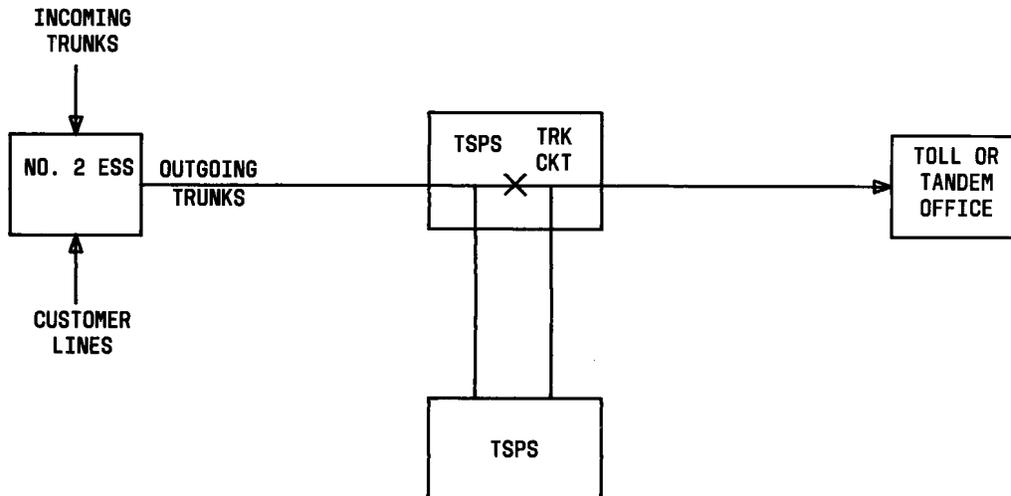


Fig. 1—Block Diagram of Connections Between No. 2 ESS and TSPS

- Identify the calling party's telephone number (provided the calling party is not a trunk 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 rering, coin collect and coin return operations.

**1.07** The No. 2 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" group to TSPS) is recommended over the separate group method.

**1.08** In addition, various combinations of coin, noncoin, and hotel-motel calls are allowed over the same No. 2 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, prepay 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 prepay and DTF in the same group) or a combination

of all three types over the same trunk group. Again, the latter is recommended. All generic programs are capable of handling this type of operation. Regardless of the group arrangement, translations in the TSPS machine must be set up as if receiving combined, coin, and noncoin traffic over each group from a No. 2 ESS office. (This type of group is called a "supercombined" group in TSPS language.) This arrangement is required when working with No. 2 ESS for two reasons.

- (1) No. 2 ESS can only send the supercombined type of signals to a TSPS. (These signals also work when separate groups are set up.)
- (2) TSPS does not always send inband MF signals, for rering (required by No. 2 ESS) in the nonsupercombined mode of operation.

**1.09** 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. 2 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.

**2. USER PERSPECTIVE****CUSTOMER**

**2.01** 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.

**2.02** 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 tandem office and onward through the network until it reaches the called party. The customer then completes the call just like any other call. 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.

**TELEPHONE COMPANY**

**2.03** No actions are required on the part of the No. 2 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.

**3. SYSTEM PERSPECTIVE****SOFTWARE DATA STRUCTURES**

**3.01** The software required to interface the No. 2 ESS and the TSPS is provided by the generic program. Any current issue of the generic program can provide this feature.

**3.02** The basic translation sequence required to complete a call to TSPS is shown in the translation layout of Figure 2. Each trunk group to TSPS must be accordingly represented by the TSP/CMA indicator in the Trunk and Service Circuit Group Data table of the trunk group translator.

**HARDWARE**

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

- Outgoing trunk circuits for high-low and reverse battery supervision (SD-2H144)
- Two-way trunk circuits for E&M supervision (SD-2H112)
- MF transmitters
- MF receivers (for coin control and rering 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. 2 ESS office.

**FEATURE OPERATION**

**3.04** 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 terminal equipment number (TEN) is translated in order to identify the calling party, and an originating register (OR) is selected to store the customer's dialed digits. The TEN translation yields the billing number associated with the calling party.

**3.05** 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 in order to obtain a screening table address and a direct route index. The screening table address is used to index the proper screening table which provides a charge index and route index. For routes to TSPS, charge index 001 is provided to indicate that the call is free. The TSPS will record all the required toll charging information for billing purposes.

**3.06** The route index is used to access a route index expansion. This expansion provides the next route index, an exit type of 10 and the expected number of dialed digits. (Exit type 10 is used for all calls routed to TSPS.) The next route index is expanded to obtain the TSPS trunk group number. This second route index expansion is a type 02 or 04. Usually exit types 02 and 04 are used to define the number of digits expected (10 or 7 digits, respectively); however, since the first route index expansion provides the number of expected digits, the 02 and 04 exit types are arbitrary.

**3.07** The trunk group number is translated next to select an idle member. The Trunk and Service Circuit Group Data table provides the largest member number, the call store address of the Group Status Block, the program store address of the Trunk Circuit List, the TSP/CMA indicator (11 represents a TSPS group), and the circuit state index.

**3.08** The Group 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. The Trunk Circuit List is entered to obtain the pseudo scan point number (PSPN) for the selected trunk. The Circuit State Table is entered to determine the relay states required to place the selected trunk circuit in the desired state, and finally, the PSPN for the selected trunk is translated to obtain the associated TEN.

**3.09** When the TSPS trunk has been properly selected, a path between the calling party and the trunk circuit must also be selected. The trunk circuit is placed 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. 2 ESS is in the form of inband MF signaling.)

**3.10** Next, the trunk seizure signal (off-hook), as shown in Figure 3, 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. If for some reason this start sending signal is *not* received within 16 seconds after seizure, the customer is given reorder tone and the call must be redialed.

1, 0, OR NO  
PREFIX AND  
FIRST THREE  
DIALED DIGITS

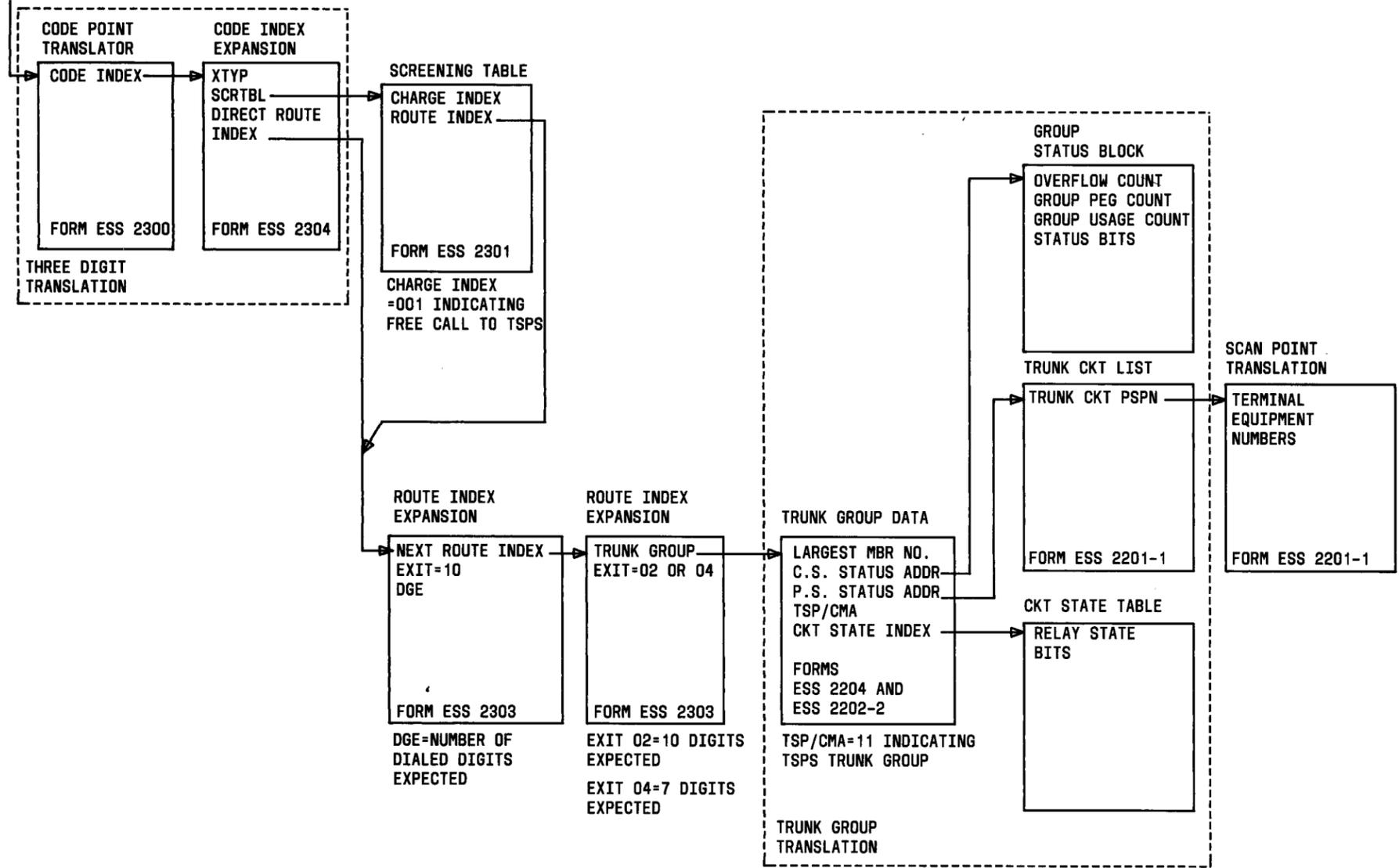


Fig. 2—TSPS Interface Translation Layout

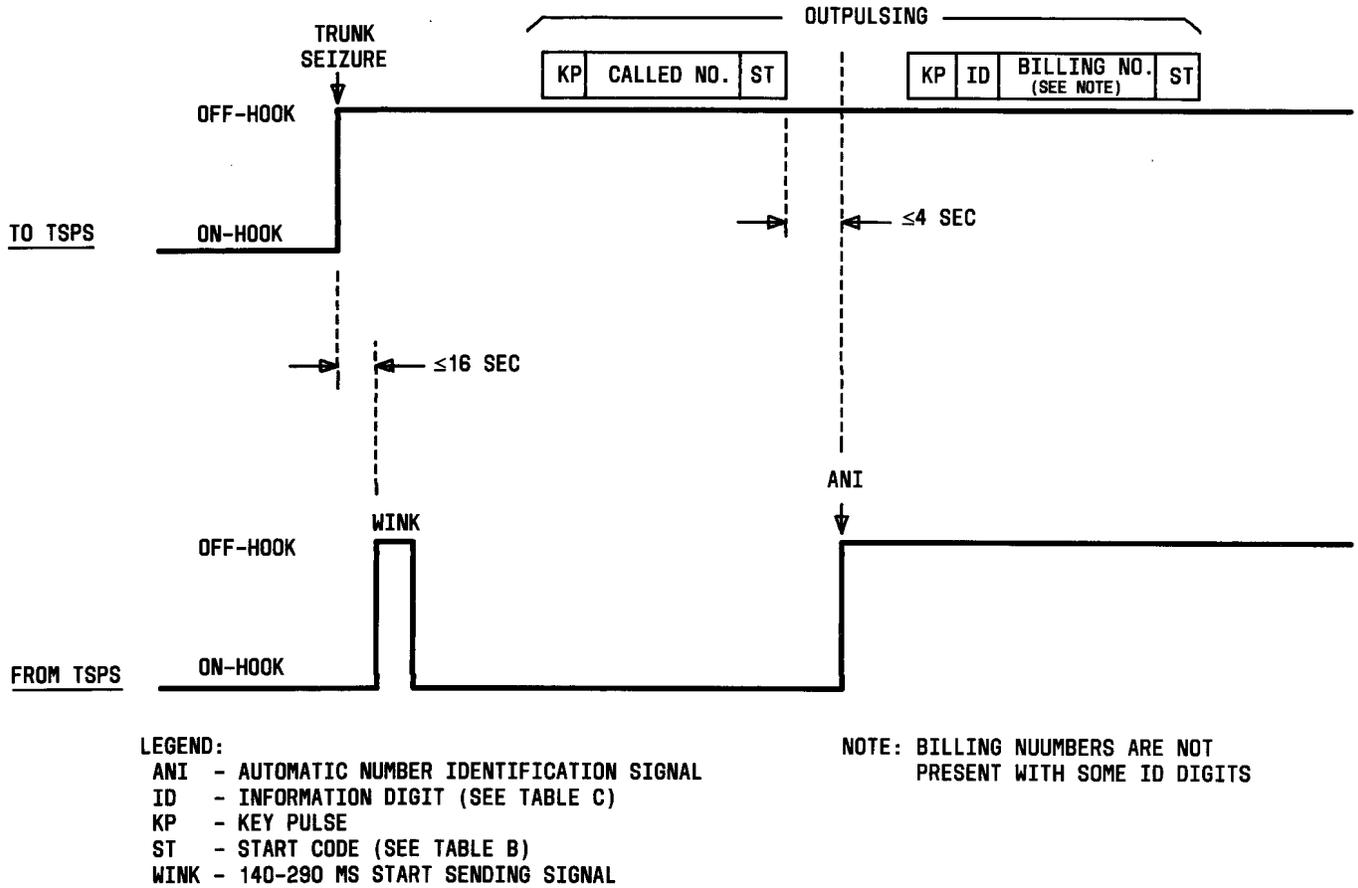


Fig. 3—Signaling to and from TSPS on Calls from No. 2 ESS to TSPS

3.11 If the start sending signal is received, the called number is retrieved from the OR 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.

TABLE A  
FREQUENCIES FOR MF PULSING

INFORMATION DIGIT	FREQUENCY (IN HZ)					
	700	900	1100	1300	1500	1700
1	✓	✓				
2	✓		✓			
3		✓	✓			
4	✓			✓		
5		✓		✓		
6			✓	✓		
7	✓				✓	
8		✓			✓	
9			✓		✓	
0				✓	✓	
KP			✓			✓
ST					✓	✓
ST1P*		✓				✓
ST2P				✓		✓
ST3P	✓					✓

\* Sometimes labeled STP

TABLE B  
START CODE DESCRIPTIONS

START CODE	DESCRIPTION		
	OPERATOR ASSISTED	LINE TYPE	FIRST DIALED DIGIT
ST	YES	COIN	1, 2-9
ST1P*	YES	COIN	0
ST2P	NO	NONCOIN	1, 2-9
ST3P	YES	NONCOIN	0

\* Sometimes labeled STP

3.12 When the called number information has been received by the TSPS, an automatic number identification (ANI) signal (off-hook) is returned to the No. 2 ESS. Reorder tone is returned to the customer if this ANI signal is **not** received within four seconds. Upon reception of the ANI signal, the billing number must be retrieved from the translations associated with the calling party and stored in the OR to be outpulsed to

the TSPS (refer to Part 16 for more details on billing arrangements). This translation process also indicates whether or not special toll billing (QZ) is required (refer to Section 232-190-109 for further details on special toll billing).

3.13 An information digit, based on the line's originating translation, is written into digit position 0 of the OR prior to outpulsing. This

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.

TABLE C

INFORMATION DIGIT DESCRIPTION

INFO DIGIT	DESCRIPTION
0	CALLING PARTY IS IDENTIFIED
1	CALLING PARTY NOT NORMALLY IDENTIFIABLE (A TRUNK, PBX OR MULTIPARTY LINE, QZ, ETC.)
2	CALLING PARTY NOT IDENTIFIED DUE TO A TROUBLE
6	CALLING PARTY IDENTIFIED, AND IS A HOTEL OR MOTEL (ORIGINATING MAJOR CLASS 34 OR 40)

**3.14** The billing number (including the information digit), is retrieved from the OR and outpulsed preceded by the KP signal and followed by the appropriate start code. (If information digit 1 or 2 is present, no billing number is provided by the originating translation process; 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.

**3.15** 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.

**3.16** A functional flow diagram describing the operations performed to place a call via TSPS is shown in Figure 4.

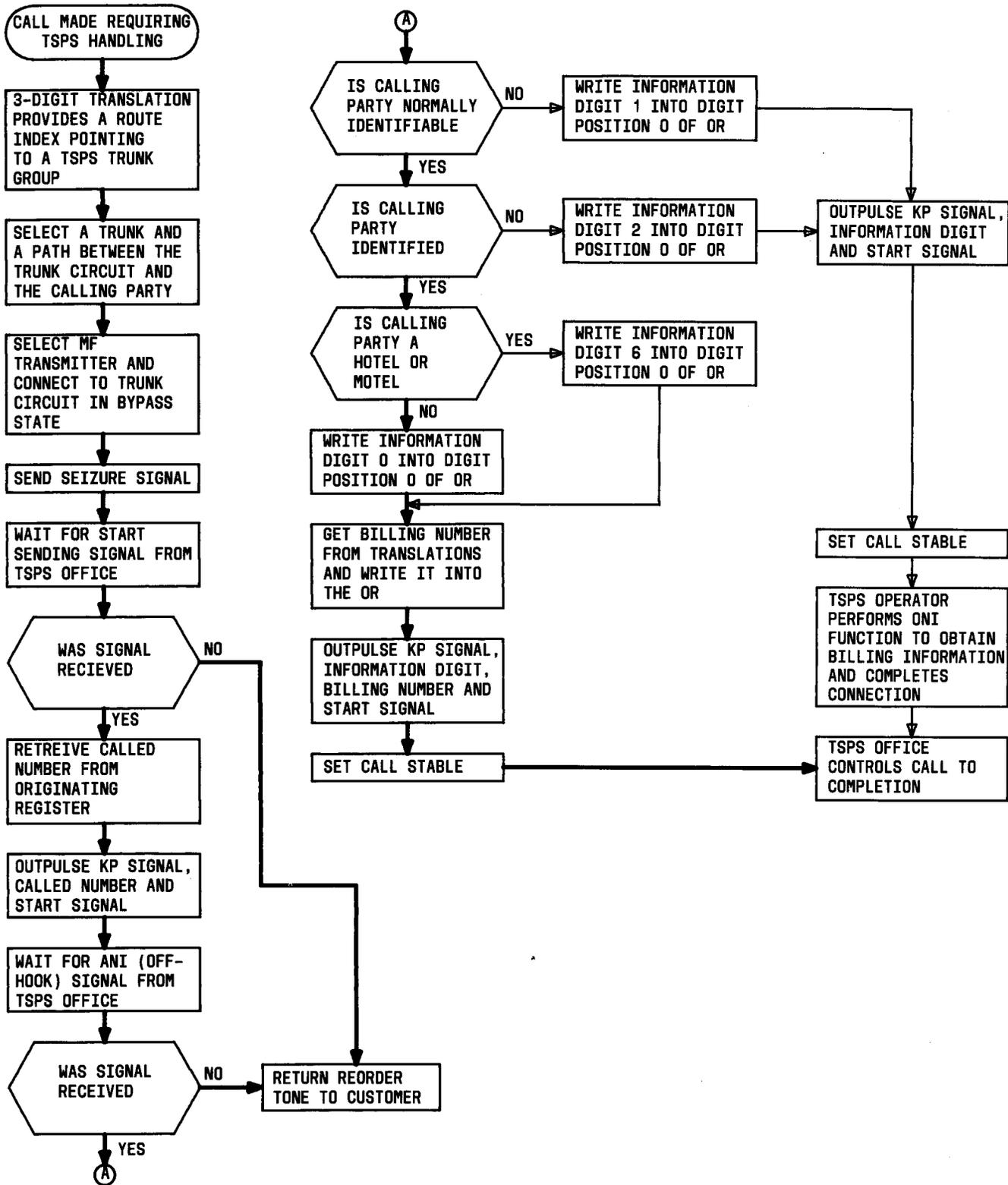


Fig. 4—TSPS Interface Flowchart

3.17 The TSPS operator can perform coin collect, coin return, and rering functions for calls originating at the No. 2 ESS office by initiating a series of events to be completed automatically by the TSPS. First, the TSPS causes an on-hook wink to be returned to the No. 2 ESS, which causes an MF receiver to be connected to the trunk circuit. The TSPS then sends the information digit associated with the desired function. These associations are shown in Table D. The information digit is received by the MF receiver and decoded so that the proper service circuit (coin control or ringing circuit) can be connected to the customer's line to perform the desired function. A flowchart showing the

TABLE D  
OPERATOR SIGNALS

OPERATOR CONTROLLED FUNCTION	SIGNALING DIGIT SENT TO NO. 2 ESS
COIN COLLECT	2
COIN RETURN	KP
RERING	ST3P

operations performed to accomplish the operator functions is shown in Figure 5.

3.18 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.

**FEATURE ATTRIBUTES**

**4. APPLICABILITY**

4.01 The TSPS interface is provided on a per-system basis in all generic programs of No. 2 ESS.

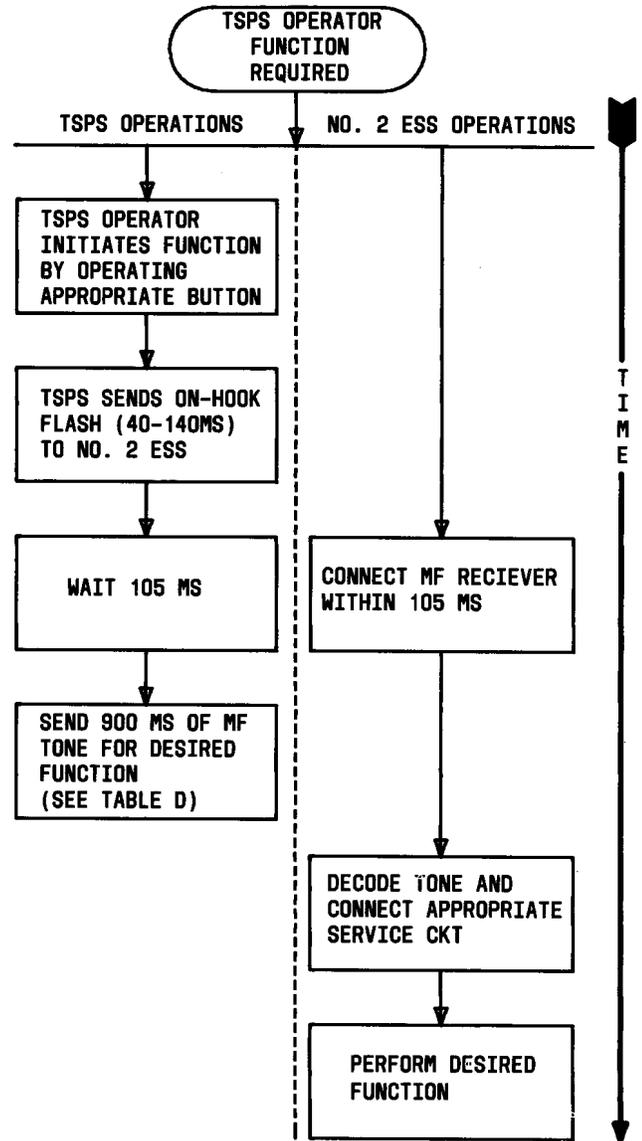


Fig. 5—TSPS Operation Function Flowchart

**5. LIMITATIONS AND RESTRICTIONS**

5.01 The TSPS requires that outpulsing from the No. 2 ESS be in the form of MF encoded digits.

5.02 A maximum of 15 digits for the called number and 7 digits for the billing number may be outpulsed to the TSPS.

5.03 The No. 2 ESS waits a maximum of 16 seconds for the wink start and 4 seconds for the ANI signal to be returned by the TSPS.

Reorder tone is returned to the customer if these signals are not received within the allotted time intervals.

## 6. COMPATIBILITY AND INTERACTIONS

6.01 This feature was designed in order to make the No. 2 ESS compatible with the TSPS. Although No. 2 ESS cannot automatically identify the calling party when the call originates from another office or from a multiparty line, the TSPS operator is notified to verbally obtain the customer's billing number.

6.02 When OUTWATS assistance calls are made from a centrex station (EF-1 generic program) and routed through TSPS, the billing number outpulsed to TSPS will be the centrex stations billing number instead of the OUTWATS billing number. The calling party must then verbally provide the OUTWATS billing information to the TSPS operator.

## 7. COST FACTORS

### Memory

7.01 Except for the included TSP/CMA indicator, the memory requirements for a TSPS trunk are no different than for any other trunk.

### Hardware

7.02 The hardware required to provide the TSPS compatibility is described in 3.03.

## 8. AVAILABILITY

8.01 The TSPS Interface feature is available in all issues of the generic programs.

## CONSIDERATIONS FOR INCORPORATION OF FEATURE INTO SYSTEM

## 9. PLANNING

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

## 10. HARDWARE

10.01 The following hardware items are necessary for this feature.

- MF transmitters
- MF receivers
- Outgoing trunk circuits (SD-2H144 or SD-2H112)

The complete hardware engineering data for all No. 2 ESS trunk and service circuits can be found in the Trunk and Service Circuit Engineering Specification (J2H031A-1).

10.02 Division D, Section 12-d of the Traffic Facilities Practices identifies by type, order code, schematic drawing and functional use all of the trunks and miscellaneous circuits that may be used in a No. 2 ESS.

## 11. DETERMINATION OF QUANTITIES

### HARDWARE

11.01 Division D, Section 12-c of the Traffic Facilities Practices provides the methods for determining the necessary quantities of service circuits. Traffic design worksheets for service circuits and trunk circuits can be found in Division D, Section 12-1 of the Traffic Facilities Practices. Refer to Division D, Sections 12-d and 12-g for determining trunk quantities.

### MEMORY

11.02 The methods for determining memory requirements are found in Traffic Facilities Practices, Division D, Section 12-f(2) (for program store) and Section 12-f(3) (for call store).

## 12. ASSIGNMENTS AND RECORDS

### Assignment Recommendations and Guidelines

12.01 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 classes 34 (PBX/MLHG) and 40 (individual). These major classes indicate to the TSPS 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.

#### Input and Record Keeping

**12.02** The following translation input forms must contain information required to implement the TSPS interface feature. These forms must be submitted to the WECO Regional Data Center for the initial office data administration (ODA) run. Refer to Translation Guide, TG-2H for details and other information required to complete these forms.

FORMS	TITLE
2100	Directory Number Table
2201	Trunk Assignment Table
2202	Trunk Group Table
2204	Trunk Feature Table
2300	Three- and Six-Digit Translation Table
2301	Rate and Route Table
2303	Route Index Expansion Table
2304	Code Group Translation Table
2306	Line Class Code Table

**12.03** Form 2100 (2101 for centrex lines) is used to assign line class codes to directory numbers (i.e., hotels, motels, and manual lines for purposes relating to TSPS). This information is recent changeable (using the A RC:L/ message with keyword LCC) and effective immediately after the RC message is accepted by the system. Refer to Sections 232-118-102 and 232-118-103 for recent change procedures.

**12.04** The originating and terminating major classes are associated with the line class codes on form 2306. Pertinent information provided on the remainder of the previously listed forms is shown in Figure 2.

**12.05** Changes in routing and trunk group translations may be made using the following RC messages:

MESSAGE	EXPLANATION
A RC:CRI	Used to change a route index on a given code index
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 and service circuit group tables
A RC:RI	Used to change a route index
A RC:TRK	Used to change data associated with trunk groups.

Further details about these messages and their use can be found in IM-2H200 and Sections 232-118-102 and 232-118-103.

**12.06** Output records of information provided in translations are provided with each ODA run. Generally the output forms have the same numbers as the input forms but are suffixed with an "R". For information regarding the output records, refer to TG-2H. A record of all recent change messages and teletypewriter messages must be kept as part of office records.

#### 13. NEW INSTALLATION AND GROWTH

**13.01** If previously defined spare trunk groups of the correct type are available, an ODA run is unnecessary to implement the TSPS Interface feature in an existing No. 2 ESS. The recent change messages listed under ASSIGNMENTS AND RECORDS may be used to assign the spare trunk groups to TSPS.

**13.02** In cases where spare trunk groups are unavailable, or in cases of new installations, the forms listed under ASSIGNMENTS AND RECORDS must be completed and submitted to the WECO Regional Data Center. Adequate hardware units (MF transmitters, MF receivers, trunk circuits, etc.) must be provided. These quantities must be determined through methods described under DETERMINATION OF QUANTITIES. More detailed

## SECTION 232-190-149

information concerning the ODA run can be found in Section 232-124-301.

### 14. TESTING

**14.01** All trunks and service circuits associated with the TSPS Interface feature can be tested at the No. 2 ESS using the maintenance TTY and the trunk test panel.

**14.02** Tests for the TSPS associated trunk circuits SD-2H112 and SD-2H144 can be found in Sections 232-146-501 and 232-141-503, respectively.

**14.03** Tests to verify translation information in the No. 2 ESS consist of the appropriate verify messages entered via the TTY. These messages are as follows:

A VY:L/	Originating line translation (hotels, motels, and manual line)
A VY:TRK	Trunk translations
A VY:SVC	Service circuit translations (MF transmitters, MF receivers, etc.)
A VY:GRP	Trunk group translations

Refer to IM-2H200 for information pertaining to the variable fields of these messages. OM-2H200 provides the interpretation for the response of these messages.

### 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 232-120-301. No other measurements are necessary for this feature.

### 16. CHARGING

**16.01** All charging for calls routed through TSPS from No. 2 ESS is performed by the TSPS; however, the No. 2 ESS must output 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. Centrex customers may have calls billed to individual centrex extensions, the

LDN for the centrex group, or to some other number specified by the Group Billing Index (GBI). Refer to Section 232-190-355 for further details concerning centrex billing.

**16.02** OUTWATS (including OUTWATS assistance) calls may also be routed through TSPS. Billing numbers for these calls are also outputted to TSPS even though the format for these numbers is different. For more information concerning OUTWATS calls, refer to Section 232-190-142.

## 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. 2 ESS upon the reception of the called telephone number. The signal indicates that the TSPS is ready to receive the billing number.
- DDD (Direct Distance Dialing)—Customer dialed toll calls
- DTF (Dial-Tone-First)—A feature by which No. 2 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 (i.e., a called or calling party telephone number).
- LCC (Line Class Code)—A 3-character alphanumeric code that specifies a customer class of service.

- **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 nonrecent changeable software is changed in the No. 2 ESS. Information from the ODA input forms are inputted into the regional ODA computer, then sent back to the No. 2 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).
  - **OR (Originating Register)**—A call register used to collect and store digits received from a customer dial receiver.
  - **Outpulse**—The process of sending called and calling party telephone numbers from the No. 2 ESS to the TSPS.
  - **PSPN—Psuedo Scan Point Number**
  - **QZ**—Designation used to indicate whether a line has special toll billing (formerly known as QZ billing).
  - **Rering**—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**—An 8-word 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**
  - **TSP/CMA**—Designation used to indicate that a trunk group is being routed to TSPS or CAMA.
  - **TSPS—Traffic Service Position System**
  - **Wink**—A brief off-hook signal sent from the TSPS to the No. 2 ESS to indicate that the TSPS is ready to receive the called party telephone number.
- 18. REASONS FOR REISSUE**
- 18.01** This is the initial issue of this section.
- 19. REFERENCES**
- 19.01** The following is a list of documents which may be consulted for further information related to this feature.
- PD, PR, and PF-2H208—Outgoing Trunk Program No. 2 ESS
  - IM-2H200—Input Message Manual No. 2 ESS
  - OM-2H200—Output Message Manual No. 2 ESS
  - TG-2H—Translation Guide No. 2 ESS
  - PA-2H2XX—No. 2 ESS Office Data Tables Layout Specification
  - CD, SD-2H144—Outgoing Trunk Circuit to Crossbar Tandem, CAMA or TSP, Step by Step CAMA or TSPS No. 1 High-Low and Reverse Battery Supervision
  - CD, SD-2H112—Two-way Trunk Circuit E&M Lead Supervision
  - J2H031A-1—Trunk and Service Circuit Engineering Specification

**SECTION 232-190-149**

- Section 232-190-024—Trunking Arrangements No. 2 ESS
- Section 232-130-301—Trunk Test Panel Method of Operation No. 2 ESS
- Section 232-141-503—Outgoing Trunk Circuit SD-2H144 Tests No. 2 and No. 2B ESS
- Section 232-146-501—Two-way Trunk Circuit SD-2H112 Reverse Battery No. 2 and No. 2B ESS
- Sections 680-536-010 and 680-536-011—ESS Service Order Procedures No. 2 ESS
- Section 984-100-101—Hotel/Motel Feature General Description Traffic Service Position System No. 1
- Section 984-100-100—Traffic Service Position No. 1 General Description
- TFP Division D, Section 12-c—Service Circuits
- TFP Division D, Section 12-d—Trunks, Miscellaneous Circuits, and Frames
- TFP Division D, Section 12-f(2)—Program Store
- TFP Division D, Section 12-g—Miscellaneous System Components
- TFP Division D, Section 12-1—Network Design Worksheets
- Section 232-120-301—Traffic and Plant Measurements No. 2 and 2B ESS
- Section 232-118-102—Recent Change Procedures (Including Service Order) No. 2 ESS Generic Program LO-1
- Section 232-118-103—Recent Change Procedures (Central Office Changes) Generic Program EF-1 No. 2 and 2B ESS.
- Section 232-190-101—Charging Arrangements No. 2 ESS
- Section 232-190-109—Centralized Automatic Message Accounting and Special Toll Billing No. 2 ESS
- Section 232-190-355—Centrex Billing Arrangements No. 2 ESS