GBPPR 'Zine – Issue #3

Welcome to **Green Bay Professional Packet Radio's (www.gbppr.org)** crappy magazine!

Working hard to selfish Euro−savages can sit on their lazy asses ignoring world problems.

Table of Contents

Bell System 1013B Handset

Description

The 1013B handset consists of a T1 transmitter unit, a LB7 receiver unit, a 11C dial which contains a dirt shield between the number and plate frame to prevent contaminants from jamming the dial gear train, a 2642A transformer, a 840999320 switch assembly which contains a locking and non–locking switch for monitoring and talking, and a rubber dial boot to prevent contaminants from entering the back of the dial. These parts are assembled in orange plastic housings for the 1013B handset, and in a blue plastic housing for the 1013A handset. The 1013B handsets are furnished with a 4–foot H2B cord equipped with two 6A test clips on the test end. A P–22F231 snap assembly is provided to facilitate carrying the handset on a belt. The handset is also equipped with a rubber shoulder rest for a more secure "hands free" operation.

The 1013A, which has been replaced by the 1013B, is the same as the 1013B except that it was equipped with the older P–48V024 switch assembly and has a blue plastic housing instead of the improved–type orange plastic housings and uses the 11A dial without the dirt shields.

The 1013B handset is a general use handset and may be used in any application specified for the replaced 1011B or 1013A handset. However, when monitoring unigauge repeatered loops, the 1013A or 1013B handset must be used. The 1011–type handset cannot be used.

1013B Handset - Dial Side
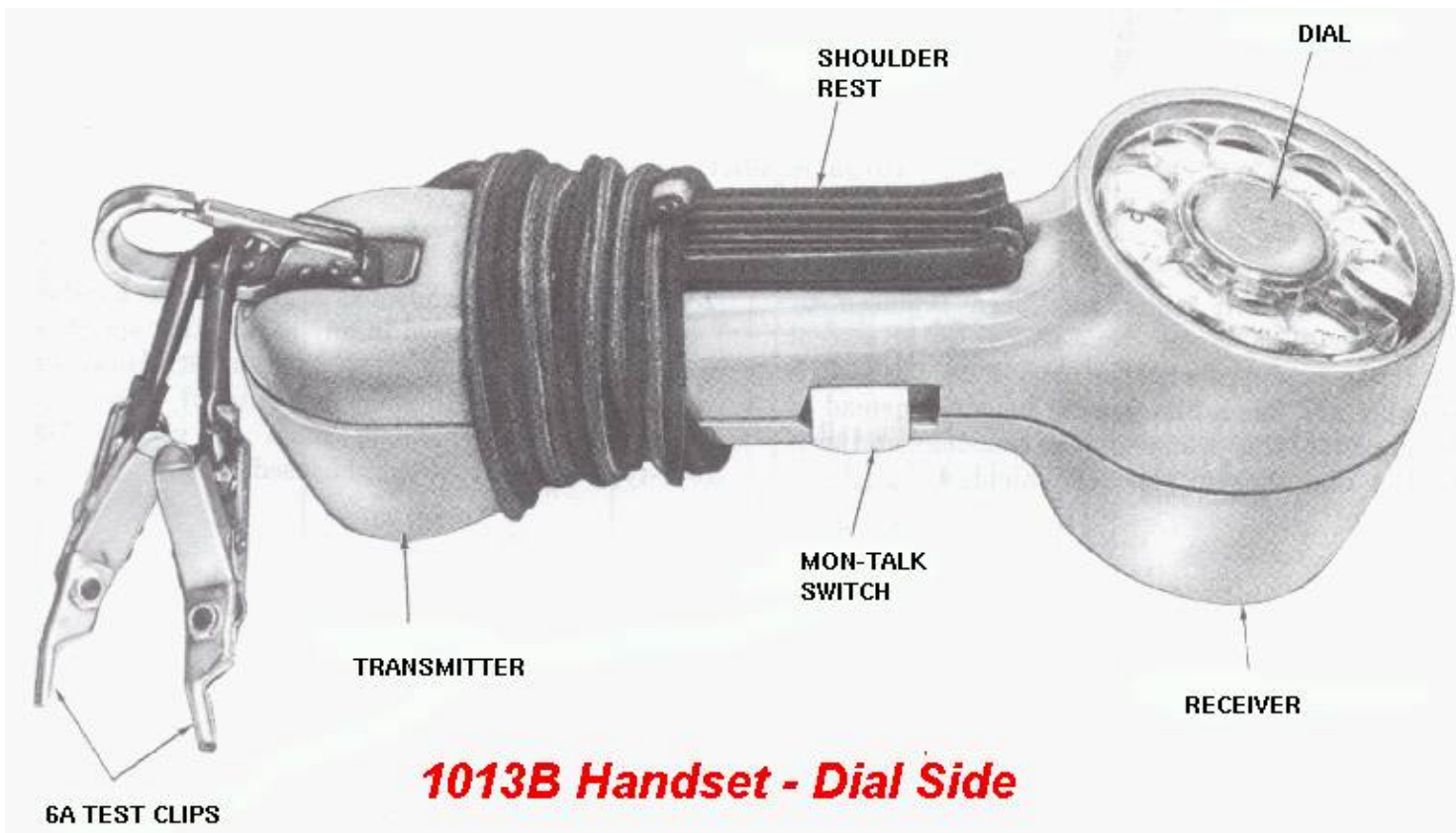
Bell System 1013B Handset

Use

When the MON–TALK switch is operated to the MON position, the receiver is bridged across the line in series with a capacitor and a high–turns–ratio transformer. The handset (in the monitoring position) introduces virtually no–bridging loss or phase shift for any frequency in the voice band. This permits monitoring on all message, Wide–Area Data Network (WADS), Teletype Wide–area eXchange (TWX), program, or high–speed data transmission facilities without interrupting service.

When the MON–TALK switch is operated to the TALK position, the talking circuit bridge impedance is low and considerable loss is introduced when the handset is bridged across a working line. The MON–TALK switch may be depressed momentarily to step switches, or for short talk periods, or locked in the TALK position by pressing down on the button and sliding toward the dial end of the handset.

The handset can be bridged either across the line or from either side of the line to ground. The handset may be bridged into the circuit at any convenient location.

The transmit and receive levels of this handset are about 3 dB lower than a 500–type telephone set.

1013B Handset - Interior View
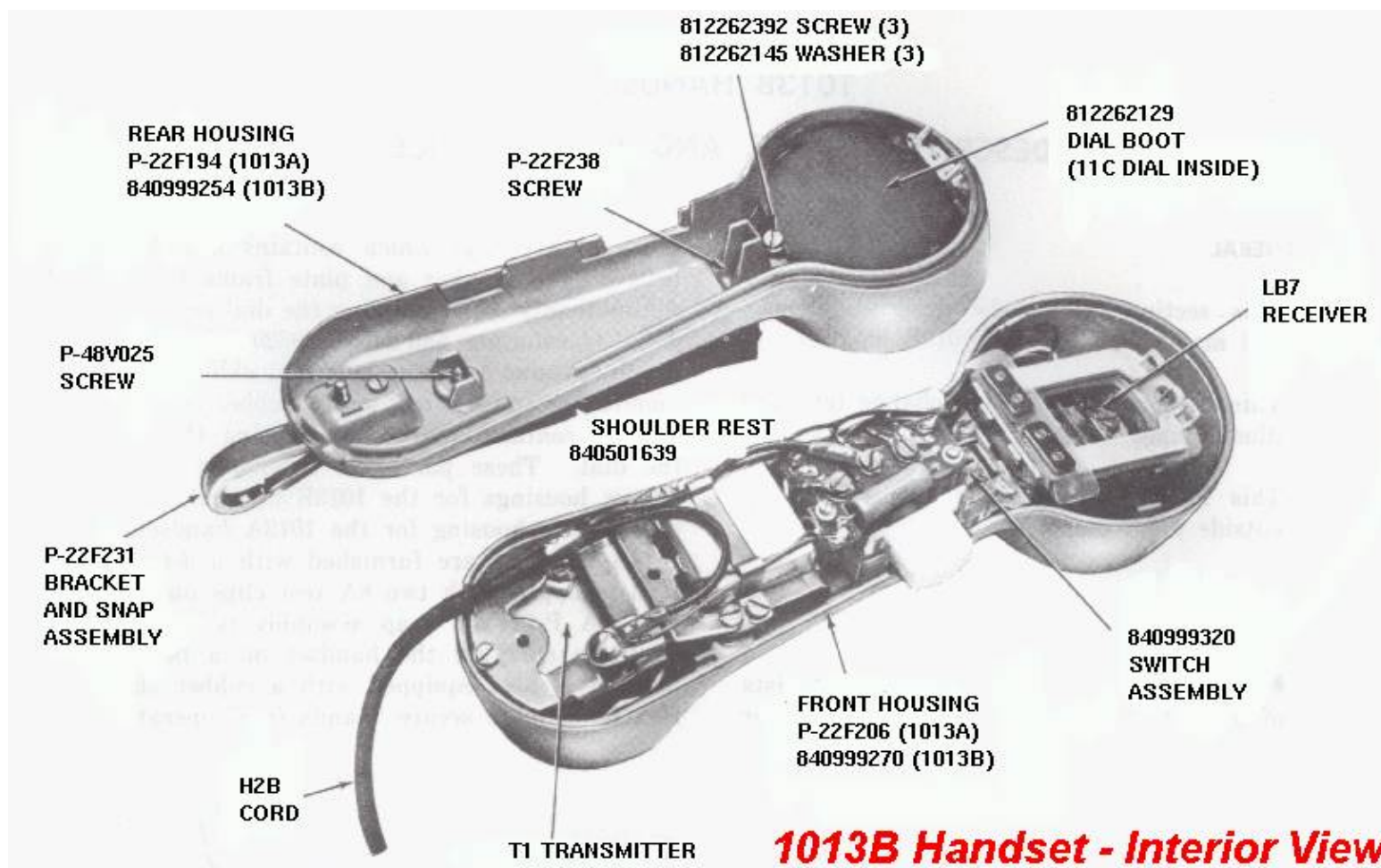
Bell System 1013B Handset

Maintenance

All parts shown and identified by part number in the diagrams may be replaced locally.

To access the internal parts, remove the three housing assembly screws. One of the screws serves as the fastener for the P–22F231 bracket and snap assembly.

The 6A test clip contains a piercing pin and is retained by a locknut which permits field replacement. Replacement pins can be obtained by ordering a D–180659 kit of parts. Each kit contains 24 pins and locknuts.

Do not lubricate the 11C dial.

The 11C dial may be rotated 1/2 turn for left–handed users. Care must be taken with dial leads when the dial is rotated.

The following replacement parts are available for field repair. For other repair operations return handset to Western Electric Co. : 11C Dial, H2B Cord, 6A Test Clips, Boot, Shoulder Rest, T1 Transmitter, LA7 Receiver.

1013B Handset Schematic
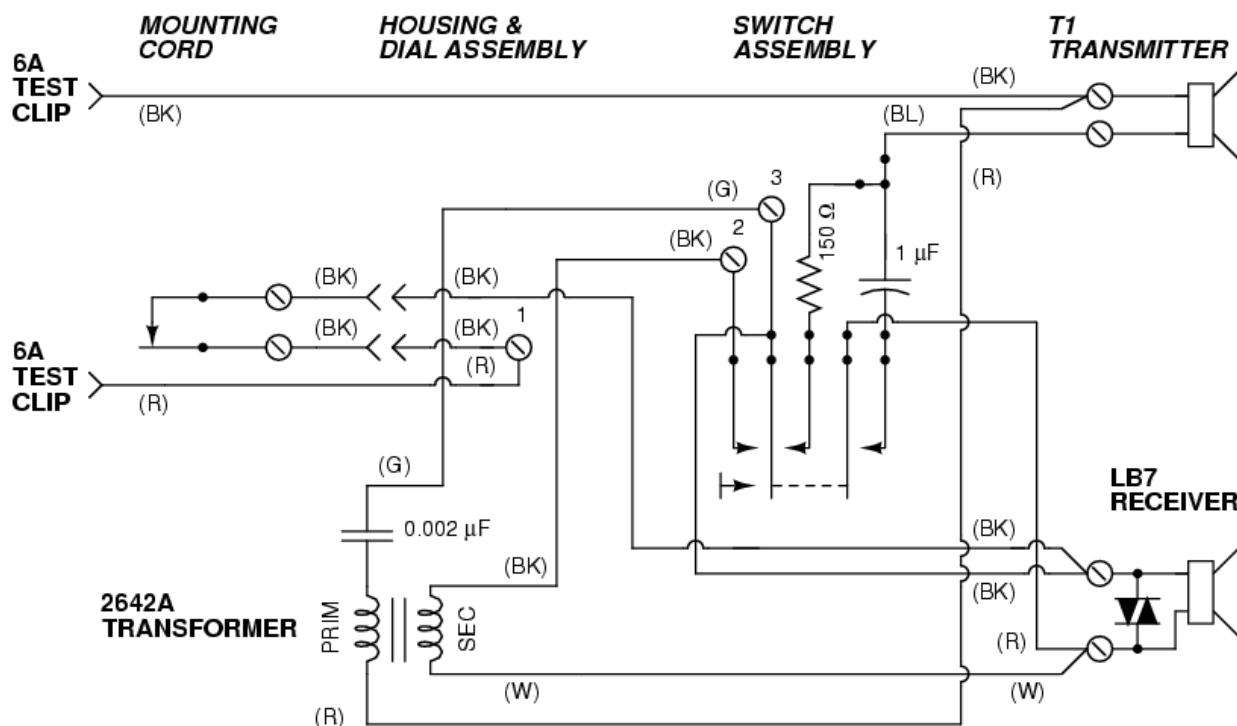
FEATURE DOCUMENT
UNIVERSAL EMERGENCY SERVICE NUMBER 911 FEATURE
BASIC 911 SERVICE
2-WIRE NO. 1 AND NO. 1A ELECTRONIC SWITCHING SYSTEMS

Printed in U.S.A.

SECTION 231-090-287

Page 2

Basic 911 Service / 1A ESS

INTRODUCTION

1. GENERAL INFORMATION

SCOPE

1.01   This Feature Document describes the basic 911 (B911) feature capabilities available in 2-wire No. 1 and No. 1A Electronic Switching Systems (ESS). This document does not cover the expanded 911 (E911) feature. For a detailed description of the E911 feature, refer to item A(1) in Part 18.

REASON FOR REISSUE

1.02   This document is reissued to provide additional background information and to reflect current terminology for 911 service. This reissue is a general revision in an 18-part format. Since this reissue is a general revision, no revision arrows have been used to denote significant changes.

FEATURE AVAILABILITY

1.03   The B911 feature is available in the base program of all active generic programs for the No. 1 and No. 1A ESS.

2. DEFINITION/BACKGROUND

DEFINITION

2.01   The number 911 is the 3-digit telephone number that has been designated for public use throughout the United States to report an emergency and/or request emergency assistance. The number 911 is intended as a nationwide universal telephone number which provides the public with direct access to a public service answering point (PSAP). A PSAP is an agency or facility which is designated and authorized to receive and respond to emergency calls requiring one or more public services such as police, fire, and/or ambulance services. Any one agency or a group of agencies may be designated as a PSAP.

2.02   The B911 feature provides the capability for a local office to complete 911 calls to the B911 PSAP associated with a particular rate center and provides for optional B911 PSAP customer services for completing and handling 911 calls.

Service provisions available with the B911 feature include:

- Forced disconnect

- Switchhook status (optional)

- Called party hold (optional)

- Emergency ringback (optional)

2.03   *Forced disconnect* is an inherent capability with B911 service and is provided to prevent a calling party, who remains off-hook, from indefinitely holding the connection to the PSAP. Forced disconnect allows a PSAP attendant to release a 911 call connection even though the calling party has not hung up, thereby preventing a tie up or jamming of dedicated 911 lines to the PSAP.

2.04   *Switchhook status* is an optional service which provides lamp indications of the originating station on-hook/off-hook condition. This optional service allows a PSAP attendant to visually determine the switchhook status of the originating station.

2.05   *Called party hold* is an optional service which enables a PSAP attendant to retain control of (hold) the 911 call connection regardless of the switchhook status (on-hook or off-hook) of the calling station.

2.06   *Emergency ringback* is an optional service which provides a PSAP attendant the capability to ring back a station that is being forced held, regardless of the switchhook status of the calling station.

BACKGROUND

2.07   Since 911 service was initially introduced, demand for the basic 911 service and special (custom) features to improve 911 service capabilities in various localities has increased significantly. For example, the E911 feature provides certain custom features and expanded 911 service capabilities not available with basic 911 service. The intent of the background information contained herein is to provide general information concerning 911 service per se and to generally describe, for comparison only, the capabilities of and differences between B911 service and E911 service. This document does not provide detailed information for E911

Page 3

service. For detailed E911 service information, refer to Item A(1) in Part 18. Items B(1) through B(13) in Part 18 provide planning, engineering, and marketing information for 911 service.

2.08 Close coordination among agencies providing various emergency services is a valuable capability provided by 911 emergency service. Other advantages to the public include one universal 3-digit number that is easy to remember and that can be called for any of the various emergency services provided within a given 911 service area. Confusion is avoided and time is saved since a caller does not have to remember or look up one or more 7-digit directory numbers to report an emergency situation or request emergency services.

2.09 A 911 service area is established on a municipal basis. PSAPs within the 911 service area are designated by the municipality. As used herein, a municipality may be a city, town, community, county, or a combination of these or other various political entities. The scope of services to be provided and agencies associated with a PSAP is entirely up to the municipality. For example, a municipality may desire one or more of the following agencies/services to be associated with a 911 service arrangement:

- Ambulance

- Civil Defense

- Drug Abuse

- Emergency Medical Services

- Fire Department

- Forestry

- Highway Patrol

- Hospital

- Poison Control

- Police

- Public Works

- Sheriff

- State Police

- Suicide Prevention

- Weather Warning.

Any agency or combination of agencies may be designated as a PSAP.

2.10 One or more attendants are located at a PSAP to receive and handle emergency calls in accordance with municipal requirements. PSAP attendants may be personnel from one or more of the various agencies, such as the police or fire department, or any other agency designated to receive 911 emergency calls. Depending on municipal requirements and procedures, a PSAP attendant may need to serve 911 emergency calls by:

- Serving as a dispatcher for one or more agencies

- Transferring the call to the proper agency

- Collecting and relaying emergency information to the proper agency.

2.11 One or more PSAPs may be required for any given municipality or metropolitan area. For example, a small community having only one police and one fire department to serve the entire community may require only one PSAP. However, a larger municipality having several police and/or fire districts may desire to have a PSAP associated with each district since the public within a particular district is generally served by the agencies within (or associated with) that district.

2.12 Assuming a municipality desiring 911 service is served by one or more No. 1/No. 1A ESS offices capable of providing either the B911 or E911 services, the choice of 911 service and service options will be made by the telephone company and the municipality and will be based on an analysis of customer needs at each location and on the availability of facilities in each area. Some of the basic considerations for 911 service include the following:

- Type of 911 services and options desired or required

- Population and area (including growth potential) of the municipality

Page 4

Basic 911 Service / 1A ESS

- The number of districts (or zones) within the 911 service area which are served by the same agencies or set of agencies

- Telephone office wire center boundaries compared to the districts (zones) or other political subdivisions within the 911 service area.

A. Basic 911 Feature Capabilities

2.13 With B911 service, a No. 1 or No. 1A ESS office can route 911 calls to one PSAP per public rate center. Typically, an office serves one public rate center; therefore, such an office can serve and route 911 calls to only one PSAP. For discussion purposes, the office that provides B911 service to a PSAP is referred to as the B911 office. The B911 office can complete both local customer originated and incoming 911 calls to the same PSAP. All 911 calls originated from stations assigned the same rate center within an office are routed to the same PSAP regardless of incongruities between telephone wire center boundaries and municipal agency districts or other political subdivisions within the B911 service area. All incoming 911 calls via the message network from other offices are routed to the same PSAP.

2.14 Generally, when a municipality requires more than one PSAP, each PSAP is served by a separate office providing B911 service since a B911 office cannot selectively route 911 calls to different PSAPs. However, a PSAP may be served by dedicated 911 lines from one or more offices providing B911 service. A B911 office can complete incoming 911 calls from other offices to the PSAP served, thus functioning as a tandem office for 911 calls. The optional switchhook status, called party hold, and emergency ringback services cannot be provided by the B911 office for incoming 911 calls from other offices or for 911 calls originating via trunks such as customer tie trunks.

2.15 Forced disconnect allows a PSAP attendant to terminate a 911 call at any time regardless of the action of the calling party. After a PSAP attendant releases from a 911 call, the 911 line to the PSAP is automatically released and made available for other 911 calls by the B911 office.

2.16 Optional switchhook status automatically provides a visual indication of the originating station switchhook status. Switchhook status is not provided for 911 calls originating via trunks at the B911 office. This option can be provided to indicate the status of customer lines (served by the B911 office) completing 911 calls.

2.17 Optional called party hold allows the PSAP attendant to hold the connection established for a 911 call originated from a local customer line, regardless of the calling party actions. Called party hold allows emergency ringback to be applied to the held line or the call to be traced to determine the calling party location. The connection is held until released by the PSAP attendant. Called party hold cannot be provided by the B911 office for 911 calls originated via trunks.

2.18 Optional emergency ringback allows the PSAP attendant to ring back a line that is being forced held, regardless of the station switchhook status. Emergency ringback cannot be provided by the B911 office for 911 calls originated via trunks.

B. Expanded 911 Feature Capabilities

2.19 The E911 feature provides expanded 911 service capabilities and optional PSAP customer services for completing and handling 911 calls. With the E911 feature, a No. 1 or No. 1A serves as an E911 tandem office for all 911 calls from other local offices in the E911 service area and as a local office for 911 calls originated by customers served directly by the E911 tandem office. The E911 tandem office may serve one or more PSAPs in the E911 service area. Thus, the E911 feature provides the capability for one office, the E911 tandem office, to serve several PSAPs existing within the E911 service area regardless of rate center assignments and/or telephone office boundary and municipality boundary incongruities.

2.20 The main characteristic of E911 service is the capability of the E911 tandem office to selectively route a 911 call originated from any station in the E911 service area to the correct primary PSAP that is designated to serve the originating station location. The following services are available with the E911 feature.

- *Selective routing* provides the optional capability to selectively route a 911 call to the correct PSAP designated to serve the originating station.

Page 5

Basic 911 Service / 1A ESS   9

SECTION 231-090-287

• **Default routing** provides the capability to automatically route a 911 call to a predesignated (default) PSAP either when selective routing is not provided or when selective routing is provided but a particular 911 call cannot be selectively routed for any reason.

• **Alternate routing** is an optional service for each E911 PSAP and provides alternate routing to a predesignated directory number for 911 calls encountering a traffic busy E911 PSAP.

• **Central office transfer** is an optional service for each E911 PSAP and provides central office transfer service to another destination upon attendant request for an established 911 call.

• **Automatic number identification (ANI)** is an optional service for each E911 PSAP which allows (for 911 calls only) the ANI telephone number of the calling station to be displayed at the answering PSAP attendant position.

• **Night service** is an optional service for each E911 PSAP. When night service is in effect for a PSAP, all 911 calls to that PSAP are automatically routed to a predesignated directory number assigned for that PSAP.

• **Forced disconnect** is an inherent capability with E911 service which allows a PSAP attendant to terminate a 911 call at any time regardless of the action of the calling party.

Note: The optional switchhook status, called party hold, and emergency ringback services available with B911 service are not available with E911 service. The optional E911 ANI display service generally satisfies the need for these types of services.

C. Basic 911 Service Arrangements

2.21 Consider a municipality that desires 911 service for public service agencies which include the police department, fire department, and ambulance service. Assume that since the greatest number of emergency calls (based on previous experience) are police calls, police department

personnel will serve as the PSAP attendants. A municipality in which the same three agencies serve the entire municipality (911 service area) may require only one PSAP. For example, if a central dispatch system is used at a PSAP facility for all emergency services provided, then only one PSAP may be required. If only one PSAP is required, selective routing and central office transfer services are not necessary. Therefore, unless ANI display is required, B911 service appears to be adequate for the hypothetical municipality being considered.

2.22 Figure 1 illustrates a simplified example of a B911 arrangement having one PSAP and using both dedicated (direct) and tandem trunking for 911 calls. A particular office can only use either a tandem trunking or direct trunking arrangement for 911 calls. For this example, the entire 911 service area was assumed to be served by the same set of agencies without any further district or political subdivisions. Switchhook status, called party hold, and emergency ringback services can only be provided for 911 calls originated from customer lines which are served by the B911 office. Calling line status, called party hold, and emergency ringback **cannot** be provided for incoming 911 calls routed from other offices via the message network to the B911 office for completion to the PSAP. Also, these services cannot be provided for add-on calls, calls from data link attendants, or customer tie trunk calls. However, a PSAP may be served by more than one office providing B911 service; therefore, if calling line status, called party hold, and emergency ringback capabilities are required for 911 calls originating from other offices, dedicated 911 lines direct to the PSAP from the other offices may be provided.

2.23 Now, consider a similar municipality except there are two separate districts within the municipality. Refer to Fig. 2. Each district (J and K) is independently served by the police and fire agencies within that district. The municipality desires a separate PSAP for each district. Assuming selective routing is either not required or not desired, B911 service can be provided by serving each PSAP (Y and Z) from separate B911 central offices (A and B). Wire center boundaries for offices "A" and "C" do not coincide with the municipal district "J" boundary. Some stations served by offices "A" and "C" are located in district "K". Since selective routing is not provided with B911, all 911 calls originating in offices "A" and "C" are completed to PSAP "Y". Therefore

Page 6

Fig. 1—Basic 911 Service Arrangement

PUBLIC SERVICE ANSWERING POINT (PSAP)

OFFICE "C" LOCAL SERVING AREA

DEDICATED 911 LINES

DEDICATED 911 LINES

CENTRAL OFFICE C (NOTE 1)

MESSAGE NETWORK TRUNKS

OFFICE "A" LOCAL SERVING AREA

OFFICE "B" LOCAL SERVING AREA

CENTRAL OFFICE A (NOTES 2 & 3)

MESSAGE NETWORK TRUNKS (NOTE 4)

CENTRAL OFFICE B (NOTES 2 & 3)

TYPICAL CUSTOMER OR COIN STATION
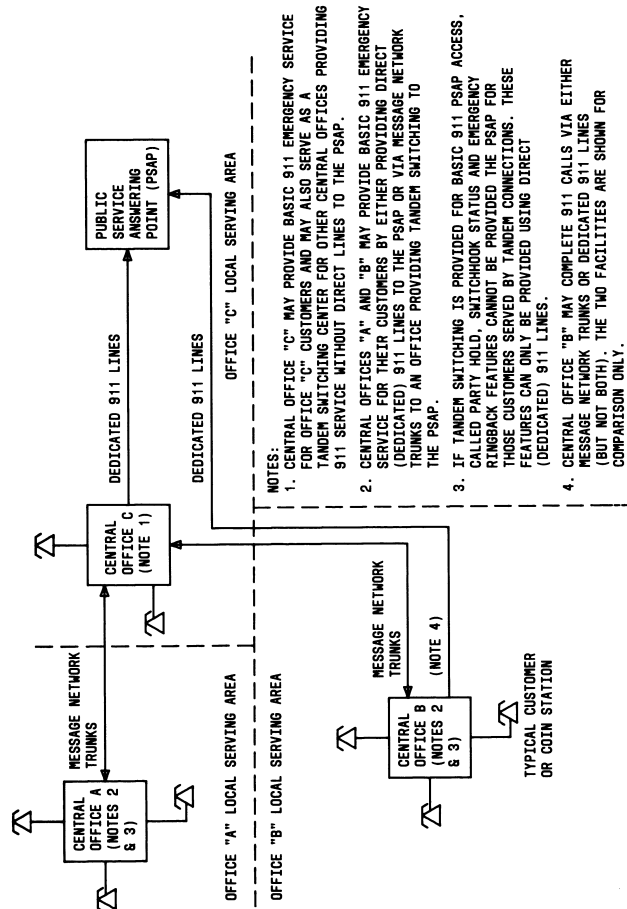
NOTES:
1. CENTRAL OFFICE "C" MAY PROVIDE BASIC 911 EMERGENCY SERVICE FOR OFFICE "C" CUSTOMERS AND MAY ALSO SERVE AS A TANDEM SWITCHING CENTER FOR OTHER CENTRAL OFFICES PROVIDING 911 SERVICE WITHOUT DIRECT LINES TO THE PSAP.

2. CENTRAL OFFICES "A" AND "B" MAY PROVIDE BASIC 911 EMERGENCY SERVICE FOR THEIR CUSTOMERS BY EITHER PROVIDING DIRECT (DEDICATED) 911 LINES TO THE PSAP OR VIA MESSAGE NETWORK TRUNKS TO AN OFFICE PROVIDING TANDEM SWITCHING TO THE PSAP.

3. IF TANDEM SWITCHING IS PROVIDED FOR BASIC 911 PSAP ACCESS, CALLED PARTY HOLD, SWITCHHOOK STATUS AND EMERGENCY RINGBACK FEATURES CANNOT BE PROVIDED THE PSAP FOR THOSE CUSTOMERS SERVED BY TANDEM CONNECTIONS. THESE FEATURES CAN ONLY BE PROVIDED USING DIRECT (DEDICATED) 911 LINES.

4. CENTRAL OFFICE "B" MAY COMPLETE 911 CALLS VIA EITHER MESSAGE NETWORK TRUNKS OR DEDICATED 911 LINES (BUT NOT BOTH). THE TWO FACILITIES ARE SHOWN FOR COMPARISON ONLY.

Basic 911 Service / 1A ESS

911 calls originated from stations served by offices "A" and "C" but located in district "K" are routed to the incorrect PSAP. In this type of situation, a method of handling 911 calls to the incorrect PSAP should be recommended to the municipality. Consider station "X" in district "K". A 911 call from station "X" is routed to PSAP "Y". Depending on municipal requirements, facilities, and procedures, PSAP "Y" attendants could handle the call directly if the station "X" customer location is to be served by the agencies (police, fire, etc.) from district "J". Otherwise, such calls may require customer provided transfer service (if available) or the emergency information may be relayed by an attendant at PSAP "Y" to an attendant at PSAP "Z" or handled in some other prescribed manner. For example, if the PSAPs are interconnected via private 2-way tie lines, the 911 call may be transferred via the private tie lines from one PSAP to another PSAP. Otherwise, the answering PSAP attendant could relay the information via either private tie lines or regular dial lines (if provided) or else the calling party may have to disconnect and direct dial the correct agency via the regular message network. This example does not mean that a municipality with two or more public service districts would necessarily have more than one PSAP. The necessary 911 services and options are determined jointly by the telephone company and the municipality.

D. Expanded 911 Service Arrangements

2.24 Several factors contribute to a more efficient 911 service arrangement by providing E911 service, rather than B911 service, for some 911 service areas. An area having several agencies and requiring several PSAPs in the 911 service area may need E911 service for selective routing due to telephone wire center and political (district) boundary mismatches or for central office transfer service due to PSAP agency associations, or for any of the other services available only with the E911 feature. The population and area, the number of separate districts and agencies, and the hierarchical arrangement of PSAPs within a 911 service area are significant factors in the type of 911 service required.

2.25 To serve an E911 service area correctly, all telephone wire centers that are wholly or partially within the E911 service area must be part of the E911 arrangement. Thus the collection of telephone wire centers may serve areas outside the E911 service area. For this discussion, it is

not important what type of 911 service, if any, is provided for those areas outside the E911 service area. Those areas could be non-911 or B911 service areas.

2.26 When E911 service is provided, a No. 1 or No. 1A ESS is used as the E911 tandem office for the E911 network (Fig. 3) to route all 911 calls to the correct (primary) PSAP designated to serve the calling station. It should be understood that the E911 tandem office (which must be a No. 1 or No. 1A ESS) serves as a tandem office for all 911 calls. The office can also serve as a regular class 5 local office. The E911 tandem office serves all PSAPs in the E911 service area. The E911 tandem office routes 911 calls from other offices and from customers served by the E911 tandem office to the primary PSAPs designated by the municipality to serve the customer stations.

2.27 The E911 feature was developed primarily to provide routing to the correct PSAP for all 911 calls. Selective routing allows a 911 call originated from a station located in a particular district, zone, town, etc., to be routed to the primary PSAP designated to serve the customer stations in that particular district regardless of wire center boundaries. Thus, selective routing eliminates the problem of wire center boundaries not coinciding with district or other political boundaries.

2.28 To illustrate the advantage of the E911 *selective routing* capability, assume a 911 service area consists of two towns (town "A" and town "B"). Refer to Fig. 4. The 911 service area is divided by each type of agency into one or more serving areas. Thus in Fig. 4, the 911 service area consisting of towns "A" and "B", is subdivided according to police and fire department service districts. In this example, police department "A" has jurisdiction in town "A" and police department "B" has jurisdiction in town "B". For illustrative purposes, three fire departments, "X", "Y", and "Z", serve their respective areas in the 911 service area. Typically, police and fire departments have coincident boundaries, but in some areas they do not. After all of the boundaries of the selective agencies are drawn, the 911 service area consists of a collection of cells. These cells are termed emergency service zones (ESZ).

2.29 An ESZ is a geographical area in which all residents are served by the same set of selective agencies. For example, in Fig. 4, all

NOTES:
1. ESS CENTRAL OFFICE "A" PROVIDES TANDEM SWITCHING FOR 911 CALLS FROM OFFICE "C" TO PSAP "Y".
2. DEDICATED 911 LINES DIRECTLY INTERCONNECT A SERVING CENTRAL OFFICE WITH A PSAP.
3. MUNICIPAL BOUNDARIES AND CENTRAL OFFICE SERVICE AREAS DO NOT NECESSARILY COINCIDE. ALL 911 CALLS FROM OFFICE "A" & "C" ARE ROUTED TO PSAP "Y".
4. 911 CALLS FROM STATIONS LOCATED IN AN AREA WITH BOUNDARY MISMATCHES WILL NOT BE ROUTED TO THE CORRECT PSAP. FOR EXAMPLE, A 911 CALL FROM STATION "X" WILL BE ROUTED TO PSAP "Y"; HOWEVER, STATION "X" IS LOCATED IN DISTRICT "K", WHICH IS SERVED BY PSAP "Z". A METHOD OF HANDLING SUCH 911 CALLS SHOULD BE ESTABLISHED.

Fig. 2—911 Emergency Service Boundary Considerations

residents in ESZ 2 are served by police department "A" and fire department "Y". Each ESZ is assigned a distinct number called the emergency service number (ESN). Thus an ESN is associated with a particular set of selective agencies which serve a specific geographical area. Each set of selective agencies has a primary PSAP (which is assigned the primary ESN) and possibly one or more secondary PSAPs (which are assigned secondary ESNs). All telephone numbers (TNs) assigned for

SECTION 231-090-287

NOTE – EACH TELEPHONE NUMBER (TN) IS ASSOCIATED WITH
AN EMERGENCY SERVICE NUMBER (ESN). THE ESN
DEFINES THE SELECTIVE AGENCIES WHICH SERVE
A PARTICULAR TN. AN ESN IS ASSOCIATED WITH
A PARTICULAR PSAP. THE 911 TANDEM OFFICE
SELECTIVELY ROUTES 911 CALLS TO THE CORRECT
PSAP BASED ON THE SELECTIVE ROUTING DATA
PROVIDED FOR THE ORIGINATING TN.
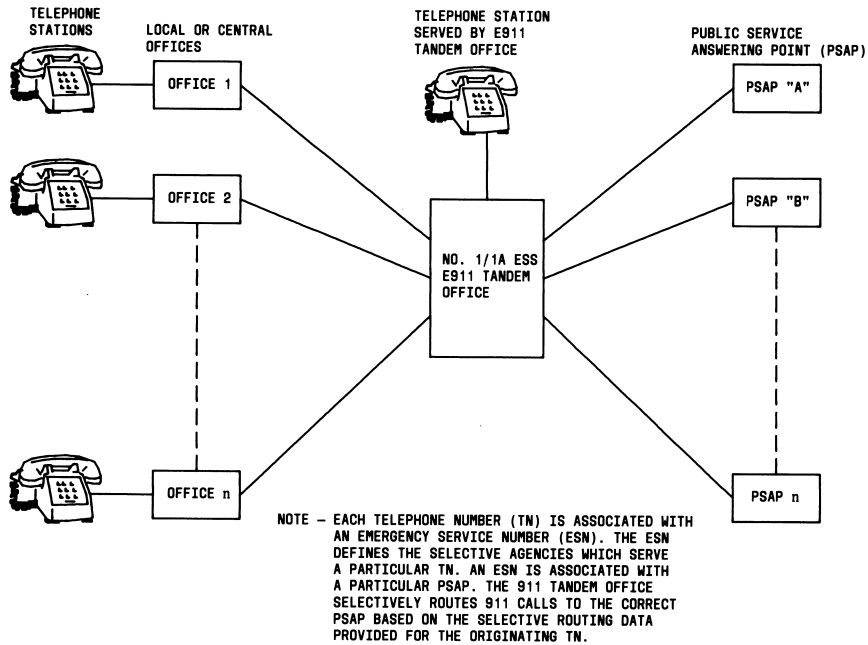
Fig. 3—E911 Network

stations located within an ESZ are associated with the primary ESN assigned for that ESZ. ESN data provides all pertinent information about the selective agencies serving an ESZ. Therefore, each TN is associated with a primary PSAP (and possibly one or more secondary PSAPs) based on the TN-ESN assignment. Table A lists and indicates these example associations. Selective routing allows completion of 911 calls to the correct PSAP regardless of telephone wire center and political boundary mismatches. For a detailed description of the E911 feature and optional services, refer to item A(1) in Part 18.

DESCRIPTION

3. USER OPERATION

CUSTOMER

3.01 Any individual, coin, business customer station, or any other facility (that can access the DDD network), which is served by an office located in the B911 service area, can be used to originate a 911 call to a PSAP without charge to the calling station. A 911 call may be originated from an individual (nonbusiness) or coin station by

Page 10

going off-hook and dialing the digits 911 after receiving dial tone. A 911 call may be originated without coin deposit from a dial tone first coin station. If coin deposit is required before receiving dial tone, coin return is made after the digits 911 are dialed. Business customer station users must dial the network access digit prior to dialing 911 (i.e. 9 + 911) to obtain access to the message network unless the customer is provided "assume dial 9" service. With "assume dial 9" service, the network access code does not have to be dialed.

3.02 A municipality providing B911 service may be generally referred to as a B911 customer. Dedicated 911 lines are required from a B911 office to the B911 PSAP. The dedicated 911 lines are used as one-way (terminating) lines for 911 calls only and cannot be used to originate calls from a PSAP. Regular customer service can be provided via other (non-911) lines or trunks for a PSAP


```
TOWN "A"
POLICE DEPT. "A"
FIRE DEPT. "X"

(ESZ 1)
                              POLICE DEPT. "A"
                              FIRE DEPT. "Y"

                              (ESZ 2)

TOWN "B"              (ESZ 3)
POLICE DEPT. "B"
FIRE DEPT. "Z"                POLICE DEPT. "B"
                             FIRE DEPT. "Y"
(ESZ 4)
```
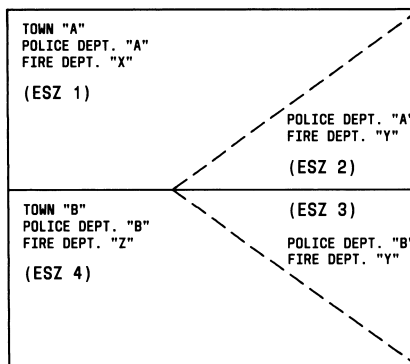
Fig. 4—Emergency Service Zones

TABLE A

E911 EMERGENCY SERVICE ZONE DATA

E911 SERVICE AREA	EMERGENCY SERVICE ZONE (ESZ)	PUBLIC SERVICE AGENCIES	PRIMARY PSAP	SECONDARY PSAPs	EMERGENCY SERVICE NUMBER (ESN)
TOWN "A"	ESZ 1	POLICE "A" FIRE "X"	POLICE "A"	FIRE "X"	ESN 1
	ESZ 2	POLICE "A" FIRE "Y"		FIRE "Y"	ESN 2
TOWN "B"	ESZ 3	POLICE "B" FIRE "Y"	POLICE "B"	FIRE "Y"	ESN 3
	ESZ 4	POLICE "B" FIRE "Z"		FIRE "Z"	ESN 4

facility to have standard message network originating and terminating service.

3.03 A B911 PSAP facility requires one or more attendant terminals, which may be a standard type telephone set(s), CALL DIRECTOR® telephone set(s), attendant console(s), or equivalent equipment. If the optional called party hold, switchhook status, and/or emergency ringback services are required, the 8A Key Telephone System or equivalent must be available or provided on the B911 PSAP customer

premises. Other types of customer premises equipment used for a B911 PSAP must be locally engineered by the telephone company. The 8A Key Telephone System is the standard customer premises equipment design for a B911 PSAP.

A. 8A Key Telephone System

3.04 The 8A Key Telephone System (J53053A) is designed to operate with a maximum of twenty incoming 911 lines, eight 2-way dial and/or

Page 11

private lines, and eight attendant terminals. A wall-mounted unit designated J53053A, L1 contains two carriers that provide for plug-in type key telephone units, circuit packs, and miscellaneous equipment. One J53053A, L1 unit will accommodate up to five 911 lines, four 2-way lines, and two attendant positions. An 8A Key Telephone System may be equipped with up to four J53053A equipment units.

3.05 The 911 lines are dedicated one-way incoming-only lines to the B911 PSAP from the B911 office. Calls cannot be originated from the PSAP using the 911 lines. Two-way dial lines may be provided between the B911 PSAP 8A Key Telephone System and the B911 office for regular (non-911) originating and terminating telephone service. Also, private lines may be equipped between the 8A Key Telephone System and another private facility. The 8A Key Telephone System may be equipped with transfer circuits to provide for attendant transfer connections at the B911 PSAP.

3.06 CALL DIRECTOR telephone sets are used with the 8A Key Telephone System for the B911 PSAP attendant positions. For a general description of the 8A Key Telephone System, refer to item A(2) in Part 18.

B. CALL DIRECTOR Telephone Sets

3.07 There are four types of CALL DIRECTOR telephone sets for use with the 8A Key Telephone System. The 682AA or 2682AA CALL DIRECTOR telephone set may be used at each PSAP attendant position when the combined total of incoming 911 lines and 2-way lines does not exceed 15 per 8A Key Telephone System. Refer to Fig. 5 for a typical faceplate layout of a 682AA or 2682AA CALL DIRECTOR telephone set. The 683AA or 2683AA CALL DIRECTOR telephone set (Fig. 6) may be used when the combination of incoming 911 lines and 2-way lines is from a minimum of 16 lines to a maximum of 27 lines per 8A Key Telephone System. Each equipped attendant position has full access to all equipped lines. For detailed information concerning CALL DIRECTOR telephone sets used with the 8A Key Telephone System, refer to items A(3) through A(5) in Part 18.

Page 12

Controls

3.08 Each type of CALL DIRECTOR telephone set contains a number of assigned line pickup buttons to answer incoming calls on 911 lines and to answer or originate calls on 2-way lines. Line pickup buttons are designated by numerals in Fig. 5 and 6. The five other control buttons shown are call control buttons described as follows:

- *HOLD*—The *HOLD* button is used to place a nontransferred 911 line or 2-way dial line on hold.

  Note: Two-way private lines cannot be placed on hold at any time. The 911 lines and 2-way dial lines cannot be placed on hold after they have been transferred.

- *FLASH*—The *FLASH* button is used to initiate (request) the optional emergency ringback service.

- *RELEASE*—The *RELEASE* button is used to release an incoming 911 line.

- *TRF RLS*—The *TRF RLS* (transfer release) button is used to release a 911 call transferred to a 2-way line without disconnecting the 911 line.

- *TRF*—The *TRF* (transfer) button is used to initiate the transfer of a 911 call to a 2-way line.

Indicators

3.09 The *TRF* and line pickup buttons are illuminating buttons which are illuminated to indicate the call status on a particular line. Table B lists the various lamp states for particular call states.

3.10 A common audible signal is provided which sounds for any incoming call to the PSAP. The common audible signal also sounds to alert the attendant when a 911 calling party being forced held (in an on-hook condition) goes off-hook. In either case, the common audible signal is silenced upon attendant answer.

```
                    FLASH    RELEASE

                     [ ]      [ ]

                              TRF
                              RLS    5      II

         ROTARY                I     6      (I)
           OR
        TOUCHTONE
           DIAL                2     7      (2)

                               3     8      (3)

                               4     9      (4)

                              HOLD   10    TRF
```
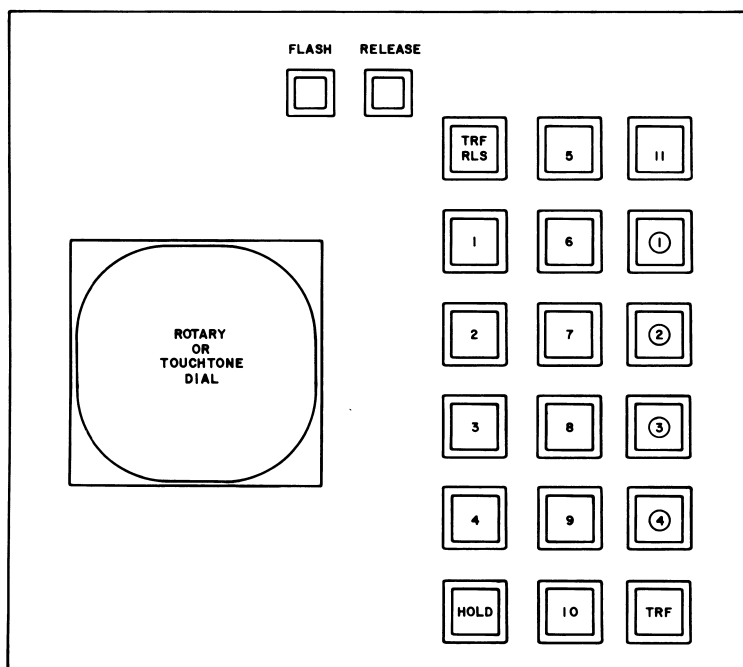
NOTE:

I. THE DIGITS I THROUGH II DENOTE LINE PICKUP BUTTONS FOR 911 LINES.

2. THE DIGITS IN CIRCLES, (I) THROUGH (4), DENOTE LINE PICKUP BUTTONS FOR EITHER 911 LINES, 2-WAY DIAL LINES, OR 2-WAY PRIVATE TIE LINES.

Fig. 5—Faceplate Layout of 682AA2 or 2682AA2 CALL DIRECTOR® Telephone Set

C. Tones

3.11 Standard tones (e.g. dial tone, busy tone, reorder tone) are provided for 2-way dial lines to a B911 PSAP.

3.12 Tones are provided by the B911 office to indicate particular call states for the 911 lines. The 911 lines cannot be used to originate calls. Reorder tone [120 interruptions per minute (ipm)] and steady low tone (480 + 620 Hz) are provided to indicate unique call states for the 911 lines. Reorder tone is provided if a PSAP attendant attempts to originate a call using a 911 line. Reorder tone is also provided to indicate that a 911 call originated from a customer station served by the B911 office was abandoned before attendant answer or that a tandem 911 call from another local office was terminated by the calling party either before or after attendant answer.

Page 13

SECTION 231-090-287
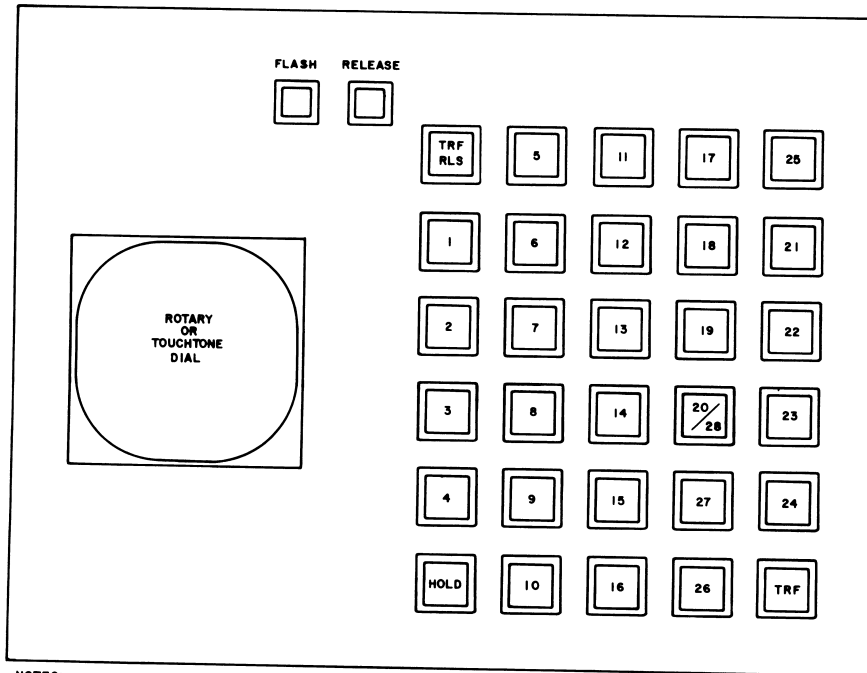
NOTES:
1. THE DIGITS I THROUGH 19 DENOTE LINE PICKUP BUTTONS FOR ALL 911 LINES.
2. THE DIGITS 21 THROUGH 27 DENOTE LINE PICKUP BUTTONS FOR EITHER 2-WAY DIAL LINES OR 2-WAY PRIVATE TIE LINES.
3. THE LINE PICKUP BUTTON DENOTED BY THE DIGITS 20/28 MAY BE ASSIGNED FOR EITHER A 911 LINE, 2-WAY DIAL LINE OR 2-WAY PRIVATE TIE LINE.

Fig. 6—Faceplate Layout of 683AA3 or 2683AA3 CALL DIRECTOR Telephone Set

3.13 Steady low tone is provided when a customer line served by the B911 office is on an established 911 call to the PSAP attendant and the calling party hangs up after attendant answer. Steady low tone alerts the PSAP attendant that the calling party hung up. If optional called party hold is provided, the originating line is automatically held until the 911 line is released by the PSAP attendant. The PSAP attendant can remain active on the 911 call, or place the 911 call on hold to free the PSAP attendant to handle other calls, or release the 911 call. If provided, the optional emergency ringback service may be initiated to signal an originating station that is being forced held.

D. Method of Operation

3.14 For a detailed description of the method of operation for PSAP attendant CALL DIRECTOR telephone sets, refer to item A(5) in Part 18.

Page 14

Basic 911 Service / 1A ESS

TABLE B

LAMP INDICATIONS

LAMP CONDITION	SIGNAL DURATION IN SECONDS		CALL STATE
	ON	OFF	
DARK	*	*	IDLE LINE
STEADY	*	*	ANSWERED CALL CONNECTED TO THE ATTENDANT
LTR (30 IPM)	1.610-1.710	0.29-0.39	CALL TRANSFER INITIATED (NOTE 1)
FLASH (60 IPM)	0.45-0.55	0.45-0.55	OFF-HOOK STATION CONNECTION BEING HELD (NOTE 2)
FAST FLASH (120 IPM)	0.22-0.28	0.22-0.28	UNANSWERED CALL ON THE INDICATING LINE (NOTE 3)
WINK (120 IPM)	0.367-0.373	0.02-0.05	ON-HOOK STATION CONNECTION BEING HELD (NOTE 4)

NOTES:
1. LTR (LAMP TRANSFER RATE): LAMP SIGNAL RATE OF 911 LINE LAMP AND 2-WAY LINE LAMP WHEN A 911 CALL IS TRANSFERRED TO A 2-WAY DIAL OR TIE LINE, AND OF TRF LAMP DURING SETUP OF TRANSFER

2. FLASH: LAMP SIGNAL RATE WHEN AN ON-HOOK CALLING STATION BEING FORCED HELD GOES OFF-HOOK. (OPTIONAL CALLING LINE STATUS)

3. FAST FLASH: LAMP SIGNAL RATE FOR ALL INCOMING CALLS ON 911 LINES AND 2-WAY LINES

4. WINK: LAMP SIGNAL RATE WHEN A CALLING STATION IS ON-HOOK, BUT THE CONNECTION IS BEING FORCED HELD (OPTIONAL CALLING LINE STATUS INDICATION) OR WHEN A 2-WAY DIAL LINE IS BEING HELD

* NOT APPLICABLE

Incoming 911 Call

3.15 The common audible signal sounds (1.0 second ON; 3.0 seconds OFF) at the 911 attendant position. The line lamp of the incoming 911 line operates at fast flash (120 ipm). The 911 attendant depresses the locking-type line button associated with the flashing lamp, the common audible signal silences, and the line lamp changes from fast flash to steady.

3.16 If the calling party goes on-hook before the attendant answers the call, the attendant will hear reorder tone (120 ipm) at answer indicating the calling party hung up.

3.17 After the 911 call is answered, the attendant controls the call (nontandem 911 calls only) even if the calling party goes on-hook.

Attendant Disconnect

3.18 To disconnect an incoming 911 line, the attendant momentarily operates the **RELEASE** button on the CALL DIRECTOR telephone set. The 911 line button releases, the line lamp extinguishes, and the 911 line is released.

Hold

3.19 The attendant can place an off-hook 911 line or a 2-way dial line on hold (2-way tie lines

Page 15

cannot be placed on hold) by momentary operation of the **HOLD** button on the CALL DIRECTOR telephone set. The line button releases and the line lamp changes from steady to wink (120 ipm). To remove the caller from hold, the attendant depresses the winking line button, which reestablishes the talking path between the calling party and the 911 attendant and causes the line lamp to change from wink to steady.

3.20   When the originating party on a nontandem 911 call goes on-hook prematurely during conversation with the attendant and does not go off-hook in response to emergency ringback, the attendant may place the 911 line on hold by momentary operation of the **HOLD** button. Steady low tone alerts the attendant that the originating party hung up. If the originating party on a tandem 911 call goes on-hook, the 911 call cannot be held. In this case, reorder tone is returned to the attendant.

Switchhook Status

3.21   For a completed nontandem 911 call (with the calling station on-hook) when the attendant operates the **HOLD** button, the 911 line pickup button releases and the 911 line lamp changes to wink. When the 911 caller goes off-hook, the 911 line lamp changes from wink (120 ipm) to flash (60 ipm) and the switchhook status common audible signal (buzzer) sounds to alert the attendant. The attendant depresses the flashing line pickup button, the buzzer silences, the flashing lamp changes to steady, and the talking path between the 911 caller and the attendant is reestablished.   Optional switchhook status can be provided only for nontandem 911 calls.

Emergency Ringback

3.22   If an originating party on a nontandem 911 call goes on-hook prematurely, optional emergency ringback, if provided, may be initiated by the attendant momentarily operating the **FLASH** button.   For emergency ringback the B911 office returns audible ringing tone to the attendant when the calling line receives emergency ringback.

3.23   Emergency ringback may also be initiated to signal a party on a nontandem 911 call who remains off-hook but does not respond.   In this case, the off-hook station receives one burst of receiver off-hook tone and the attendant receives

one burst of audible ringing tone before the talking connection is restored.

Call Transfer

3.24   To initiate a transfer, the attendant momentarily depresses the nonlocking **TRF** button. This causes the internal lamp of the **TRF** button to operate at the lamp transfer rate (30 ipm) on the CALL DIRECTOR set initiating the call, and to light steadily on all other CALL DIRECTOR sets. The attendant then depresses the desired 2-way line (dial or private) locking-type button.   This operates the transfer switch and releases the 911 line pickup key. The **TRF** button lamp goes dark, the 911 line lamp and 2-way line lamp change to the lamp transfer rate (30 ipm).

3.25   If the call is transferred to a 2-way private line, dialing is not required since the private facility is automatically signaled.   If the call is transferred to a 2-way dial line, after receiving dial tone, the attendant dials the desired telephone number.

TELEPHONE COMPANY

3.26   Not applicable.

4.   SYSTEM OPERATION

HARDWARE

4.01   No unique system hardware is required at the B911 office to provide B911 service.

4.02   Line access trunk circuits SD-1A319-01, -05 provide the system interface for outgoing 911 lines to the B911 PSAP.   The SD-1A319-01, -05 line access trunk circuit provides for the optional switchhook status, called party hold, and emergency ringback capabilities.   Each 911 line to a B911 PSAP requires one line access trunk circuit.

OFFICE DATA STRUCTURES

A.   Translations

4.03   Generally, 911 calls to a B911 PSAP are completed using 3/6 digit, DN, route index (RI), and trunk translations. For detailed information concerning translations and data structures, refer to items D(1) through D(3) in Part 18. Basic 911 service uses the following type translations.

Basic 911 Service / 1A ESS

- 3/6-Digit Translations

- 911 DN Auxiliary Block

- RI Expansion

- TGN Translator

- TCC Expansion

- Master Scanner (MSN) Translator

3/6-Digit Translations

4.04 The dialed digits 911 are translated via 3/6-digit translations to a 7-digit intraoffice DN. The digits 911 are translated as call type 28, which indicates simulated dialing of a 7-digit intraoffice DN. The 7-digit intraoffice DN associated with call type 28 is obtained and 3-digit translations are reentered to obtain rate and route data for the 7-digit intraoffice DN (call type 5). Regular DN translations are done for the 7-digit DN obtained.

911 DN Auxiliary Block

4.05 DN translations include a subtranslator word (type 7), which provides the address of the 911 DN auxiliary block. Refer to Fig. 7 for data provided in the 911 DN auxiliary block. For B911 service, only a 2-word DN auxiliary block is used since call forwarding and make-busy options are not available with B911 service. Any assigned DN is valid as a routing number. The DN has a terminating major class of 28 and a program index of three for a B911 PSAP with ringing. The RI in word 0 points to the TGN assigned for the trunk group containing the line access trunk circuits used for the 911 lines to the B911 PSAP.

RI Expansion

4.06 An RI is assigned to route 911 calls via a special line access trunk group to the PSAP. RI expansion data yields the next RI and the TGN containing the 911 line access trunks. Since alternate routing is not provided with B911 service, the next RI equals stop. A free call is indicated when return supervision equals zero (RS = 0). The TGN is translated via the TGN translator to obtain the TNN. The trunk class code (TCC) data is obtained from translating the TNN.

TGN and TNN Translators

4.07 The TGN auxiliary block provides the trunk group type, number of trunk members, and the trunk network number (TNN) assignments. The TNN to TGN translator provides the member number, TCC, and TGN.

TCC Expansion Table

4.08 The 4-word TCC expansion table (Fig. 8) contains service class data for the 911 line access trunk circuits. The emergency ringback option is indicated by item ERF in word 4. Item CPI equals 039 for the special line access trunk circuits. Item OGT-ESB equals one indicating an outgoing trunk to a PSAP.

MSN Translator

4.09 Each special line access trunk circuit (CPI = 039) has two scan points assigned on the master scanner. The line side scan point (SC00) is assigned TPI = 40 and the trunk side scan point (SC01) is assigned TPI = 41. Each scan point requires one MSN PTW.

B. Parameters/Call Store

4.10 Not applicable.

FEATURE OPERATION

4.11 The No. 1/1A ESS office providing B911 service for a PSAP completes 911 calls originated from station lines served by that office or incoming via the message network (trunks) from other offices. The No. 1/1A ESS office completes 911 calls similar to other line or trunk calls completed to a line, except line access trunk circuits are used for the one-way outgoing (terminating service only) 911 lines to the PSAP. The line access trunk circuits provide the capability for optional called party hold, switchhook status, and emergency ringback services only for 911 calls from customer lines served by the B911 office.

A. Line Originated 911 Call

4.12 When a 911 call is originated from a line served by the B911 office, the digits are collected in an originating register and interpreted using 3-digit translations. The 3-digit translator yields a rate and route pattern call type 28

Page 17

SECTION 231-090-287

	23	22	21	20	19	18	17	16	15	12	11	10	6	5	4	2	1	0
WORD 0		WRDN					0	0		RI					0	0 0		PIND
WORD 1		RING			$C_{F_B}^{L}$		0	0	0 0 0	0	SL	0 0	0 0 0		TMAJ			

* BIT 23 DOES NOT EXIST IN THE TRANSLATION WORDS FOR NO. 1 ESS.
   IT IS EQUAL TO ZERO IN THE NO. 1A ESS.

WORD 0   WRDN = WORD NUMBER EQUALS 2 FOR B911 SERVICE
            RI = ROUTE INDEX ASSIGNED FOR 911 SPECIAL LINE ACCESS TRUNK GROUP
          PIND = PROGRAM INDEX EQUALS 3 FOR 911 SERVICE

WORD 1   RING = RINGING CODE ASSIGNED FOR 911 SPECIAL LINE ACCESS TRUNK GROUP
          CFBL = CALL FORWARD BUSY LINE EQUALS 0 FOR B911 SERVICE SINCE
                 CFBL IS NOT AVAILABLE WITH B911
            SL = SPECIAL LINE EQUALS 1 FOR B911
          TMAJ = TERMINATING MAJOR CLASS EQUALS 28 FOR RINGING PSAP

Fig. 7—911 DN Auxiliary Block Data for B911 Service

	23	22	18	17	16	15	14	11	10	9	8	7	6	3	2	1	0
WORD 1												I_{C_T}	SUPERVISION			TU	
WORD 2																	
WORD 3																	
WORD 4			#		E_{R_F}				PAD			CPI					

* BIT 23 DOES NOT EXIST IN THE TRANSLATION WORDS FOR NO. 1 ESS.
   IT IS EQUAL TO ZERO IN THE NO. 1A ESS.

OGT-ESB

NOTE: ONLY TRANSLATION DATA ITEMS FOR BASIC 911 SPECIAL LINE ACCESS TRUNK CIRCUITS ARE SHOWN.
      OTHER TCC DATA ITEMS IN WORDS 1 THROUGH 4 ARE OMITTED FOR CLARITY.

WORD 1   TU = TRUNK USAGE EQUALS 10 (TWO-WAY TRUNK)

SUPERVISION = EQUALS 0100 FOR HIGH-LOW REVERSE BATTERY

        ICT = IDLE CIRCUIT TERMINAL (EQUALS 1)

WORD 4   CPI = CIRCUIT PROGRAM INDEX EQUALS 039 (DECIMAL)

         PAD = SET TO 10 INDICATING MESSAGE TRUNK

         ERF = EMERGENCY RINGBACK FLASH SET TO 1 IF
               INDICATED, 0 IF NOT INDICATED

     OGT-ESB = OUTGOING TRUNK TO EMERGENCY SERVICE BUREAU EQUALS 1

Fig. 8—TCC Expansion Table Data for B911 Service

Page 18

Basic 911 Service / 1A ESS

(CT = 28) which causes the 3-digit 911 code to be expanded to a 7-digit intraoffice directory number (DN). The expanded 7-digit DN is then translated as if the 7-digit DN had been dialed.

4.13 The 911 emergency service DN auxiliary block provides the data for DN translations. The DN translations provide program index (equals 3 for 911 service), terminating major class, route index, and ringing code data. Terminating major class code 28 is used for the DN associated with the special line access trunk group to which ringing can be applied. Route index (RI) expansion identifies the trunk group number (TGN) assigned for 911 service. TGN, TNN, and TCC translations are used to hunt and select an idle 911 trunk member.

4.14 After digit collection, DN, TGN, TNN, TCC, and RI translations are completed, a network path is reserved between the calling line and an idle special line access trunk circuit (911 line) to the PSAP. If all 911 lines are busy, the call is given busy treatment. Otherwise, when an idle 911 line is found, a network talking path is reserved, ringing is connected to the 911 line, and audible ringing tone is connected to the calling line. When an idle 911 trunk member is seized, regular ringing (loop-type ringdown) is connected to the 911 line. Ringing is given until the 911 call is answered at the PSAP or the calling line abandons. When the call is answered, answer (off-hook signal) is returned to the ESS office causing ringing and audible ringing tone to be removed and the network talking path connections between the calling line and 911 line to be completed.

4.15 Although the network connection is physically a line-to-trunk connection, it is treated as an intraoffice line-to-line connection with ring-trip and abandon handled accordingly. If the call is abandoned prior to answer, ringing and audible ringing tone are removed; however, the line pickup lamp associated with that 911 line at the PSAP may momentarily remain illuminated. Refer to paragraphs 3.09 and 3.10 for line pickup lamp information. Upon answer, the PSAP attendant can determine the calling line status via the absence or presence of reorder tone (120 ipm). If the calling line abandoned prior to answer, reorder tone is connected to the 911 line if an off-hook signal is received from the PSAP indicating attendant answer after the call is abandoned. Reorder tone remains connected until on-hook is received for that 911 line.

4.16 After a 911 call is established, the PSAP attendant can hold the connection to the calling line (regardless of calling party actions) and perform other optional call control functions (if provided) as long as the attendant remains on the call. When the attendant releases from a 911 call, receipt of the on-hook signal automatically causes the network connections to be released (forced disconnect) and the 911 line to be idled.

4.17 Figure 9 is a flow diagram of a line originated 911 call. Seizure of a 911 line, abandon before answer, called party hold, forced disconnect, switchhook status, and emergency ringback are discussed in the following paragraphs.

911 Line Seizure

4.18 The trunk group containing the line access trunks used for 911 lines is accessed via route index expansion of the route index obtained from the 911 DN auxiliary block. Route index expansion yields the TGN. Regular trunk translations are done for the TGN to obtain the TNN, TCC, and charging data. Trunk translations are used to hunt for an idle line access trunk (911 line). If no idle 911 line is found, busy tone is given to the originating line (or trunk). Alternate routing (using a next RI) is not allowed for 911 calls. When an idle 911 line is found, 20-Hz ringing is given to the 911 line and audible ringing tone is returned to the calling line or trunk. When answer (ring-trip) is received, network connections are made for the talking path. After answer, the call is supervised for disconnect and attendant requests for optional services.

4.19 A 911 line cannot be seized from the PSAP to originate a call since 911 lines are one-way outgoing lines to the PSAP. If an attempt is made to seize a 911 line for call origination, when the off-hook signal is detected, reorder tone (120 ipm) is connected to the line access trunk until an on-hook signal is received for that trunk (911 line). When on-hook is received, reorder tone is disconnected and that trunk is idled.

Call Abandon

4.20 The originating line (or trunk) is supervised for on-hook (abandon) prior to PSAP attendant answer. If the call is abandoned before answer is received, standard abandon actions occur. Audible ringing tone is disconnected from the originating

Page 19

Page 20

Fig. 9—Line Originated 911 Call Flow Diagram (Sheet 1)
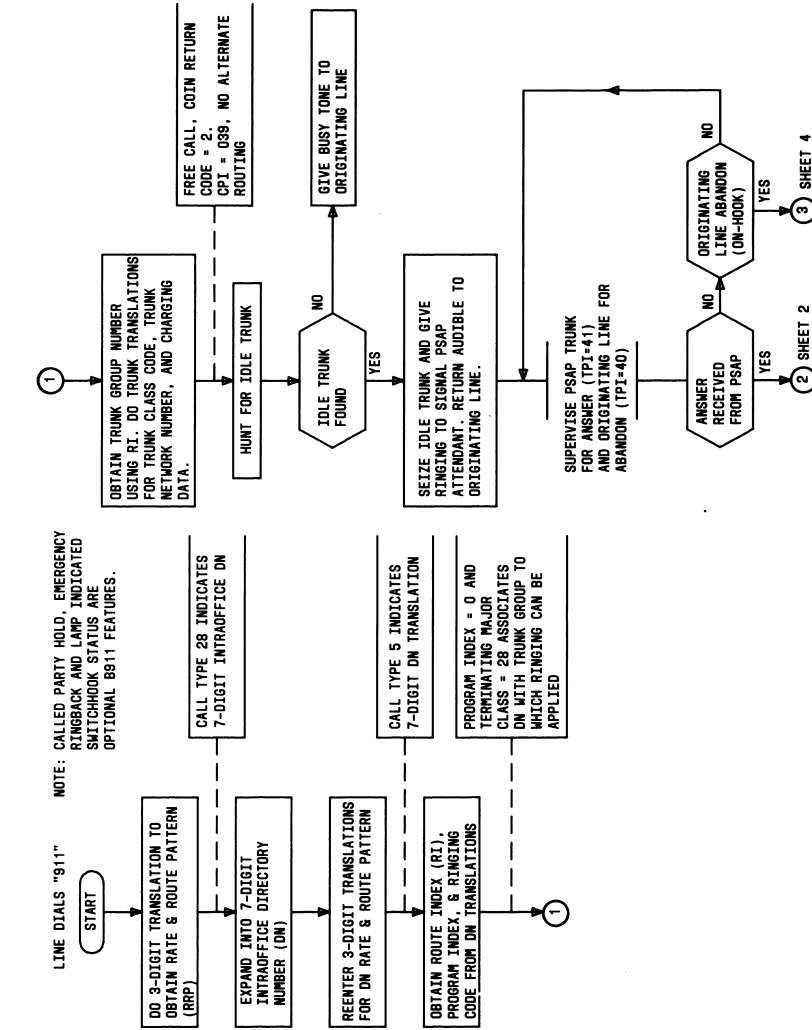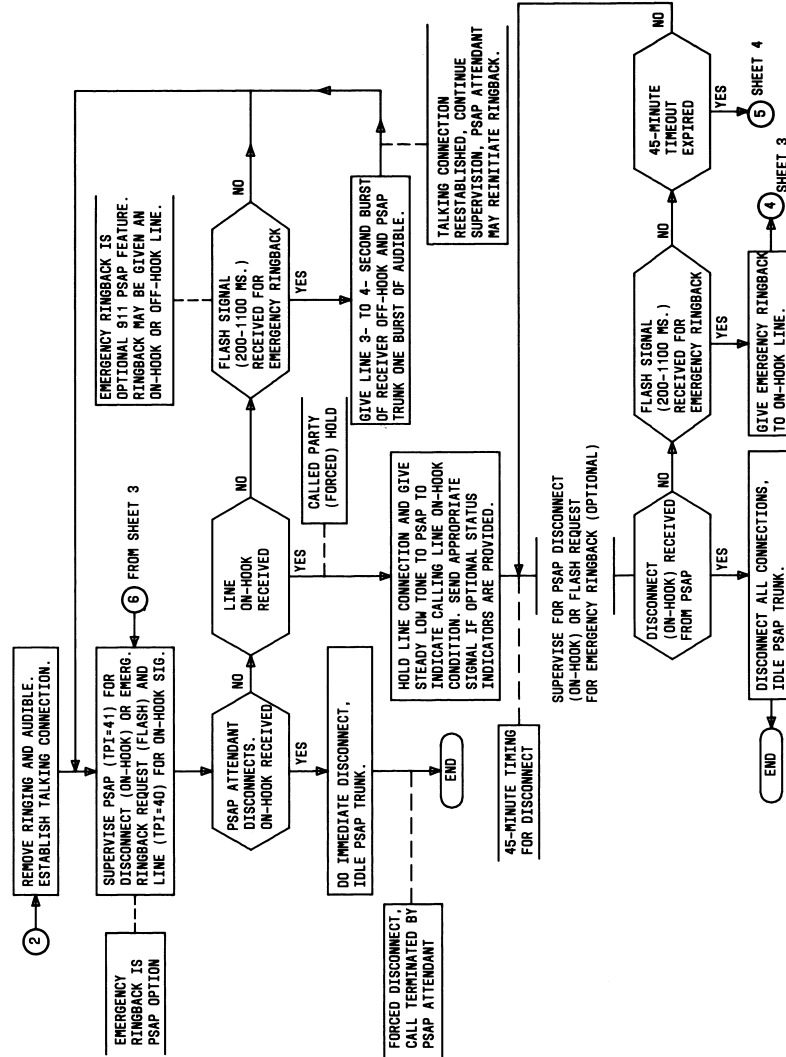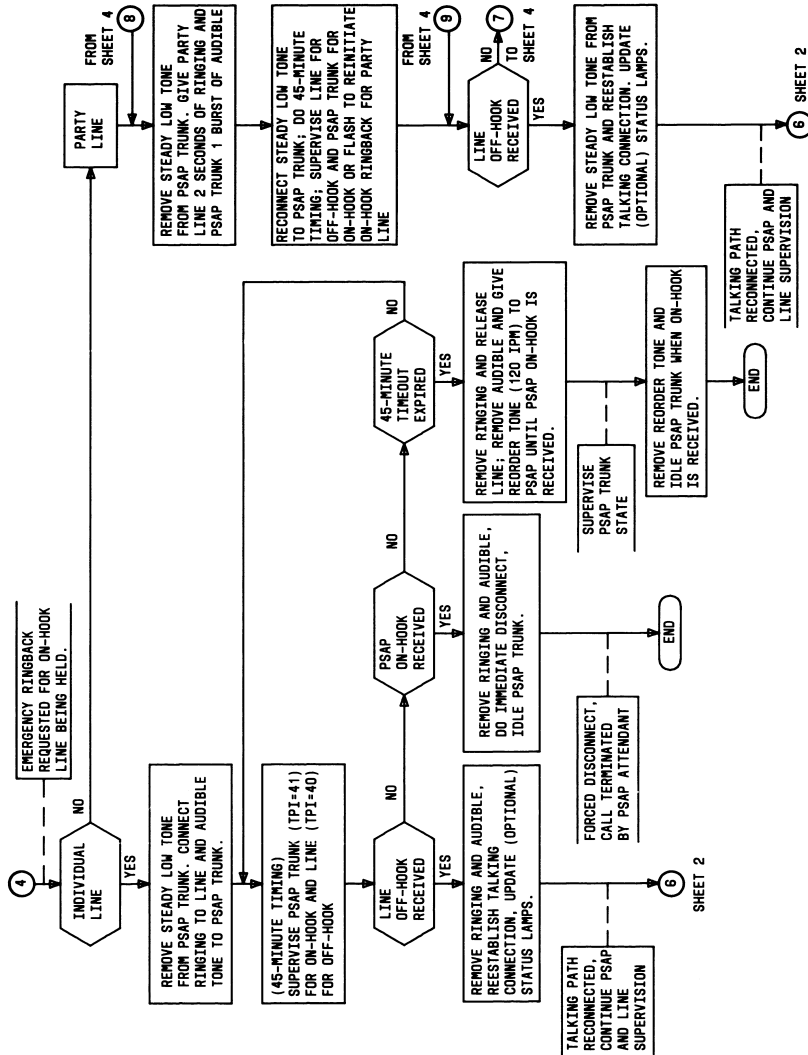
Fig. 9—Line Originated 911 Call Flow Diagram (Sheet 2)

ISS 2, SECTION 231-090-287

Page 21

Fig. 9—Line Originated 911 Call Flow Diagram (Sheet 3)

Page 22

Fig. 9 —Line Originated 911 Call Flow Diagram (Sheet 4)

Page 23
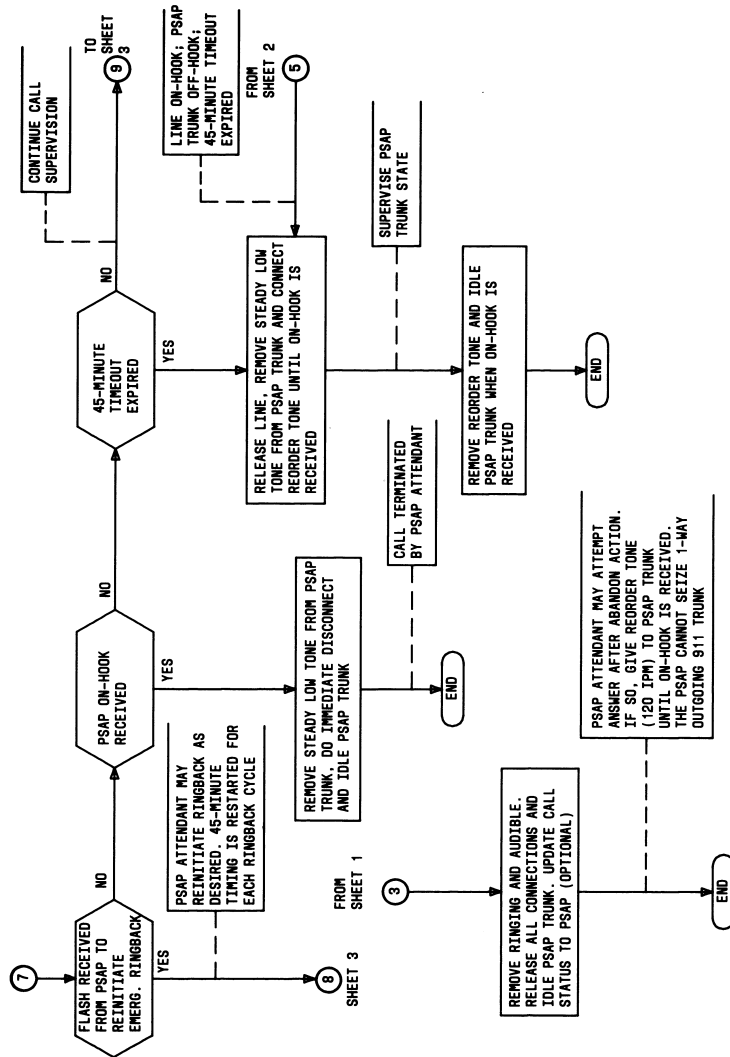
line (or trunk), ringing is removed from the 911 line, and the 911 line is idled.

4.21 When a 911 call is abandoned, the line pickup button on the PSAP CALL DIRECTOR may momentarily continue to indicate an unanswered call on that line. If an attempt is made to answer a call that has been abandoned, reorder tone is connected to the 911 line. In this case, the 911 line is treated the same way a 911 line origination attempt is treated.

Called Party Hold

4.22 Called party hold is provided only for line originated 911 calls. Trunk originated 911 calls cannot be forced held. With called party hold, the originating line is automatically held by the B911 office as long as off-hook is returned for the 911 line, regardless of the originating line off-hook or on-hook status.

4.23 During a forced hold condition, supervision is maintained for the originating line and the 911 line. The line access trunk circuit is equipped with a line side ferrod for calling line supervision and a trunk side ferrod for supervision of the 911 line. The line side scan point (scan point 0) is assigned the trunk program index (TPI) of forty (TPI = 40). The trunk side scan point for the 911 line (scan point 1) is assigned TPI = 41.

4.24 Called party hold permits the originating line to be manually traced regardless of calling party switchhook actions. While the originating line is off-hook, the talking connection to the PSAP attendant is maintained. If the originating line returns on-hook, the originating line is disconnected from the 911 line, but is forced held at the B911 office. That is, the originating line is not released and idled. Steady low tone is connected to the 911 line to alert the attendant that the calling party has gone on-hook. If the optional switchhook status service is provided, the attendant also receives a visual indication of the calling line status. During a forced hold condition, four possible actions can occur.

(1) *911 Line Returns On-Hook*—The PSAP attendant may release from the call, causing the connections to be immediately released. Steady low tone is removed, all connections are released, and the 911 line is idled.

(2) *Emergency Ringback*—If provided as an optional service, the PSAP attendant may initiate emergency ringback by causing a flash signal to be sent to the B911 office. During called party hold, receipt of an on-hook flash signal initiates emergency ringback treatment.

(3) *Originating Line Returns Off-Hook*—When a line that is being forced held goes off-hook, steady low tone is disconnected from the 911 line and the talking connection is reestablished.

(4) *45-Minute Timeout*—If none of the above events occur within the 45-minute timeout period, the originating line is released and idled, steady low tone is disconnected from the 911 line and reorder tone is connected to the 911 line. When the on-hook signal is received, reorder tone is disconnected and the 911 line is idled.

Forced Disconnect

4.25 Forced disconnect is provided to prevent 911 lines from being tied up (kept busy) by originating lines remaining off-hook. A PSAP attendant can terminate a 911 call at any time by releasing (disconnecting) from the call. When an on-hook signal with a duration of at least 1.2 seconds (which is greater than the flash timing period), is received via scan point 1 (TPI 41), the 911 line is disconnected and idled. Any line or trunk originated 911 call may be terminated via forced disconnect. In no way will calling party switchhook actions prevent the 911 line from being released. If a trunk originated call, the trunk is automatically released in 36 to 42 seconds if trunk disconnect is not received prior to time out.

Switchhook Status

4.26 In addition to the tones provided, a PSAP may be optionally provided switchhook (on-hook and off-hook) status indications for line originated 911 calls. Optional switchhook status cannot be provided for trunk originated calls. When provided, the switchhook status of an originating line being held is indicated via the line pickup keylamp indications. Refer to Table B. Switchhook status is supervised via the line side ferrod, scan point 0 (TPI 40), of the line access trunk circuit. Reverse battery supervision is used for switchhook status. Direct current signaling to the PSAP initiates the appropriate lamp indications.

Basic 911 Service / 1A ESS

Emergency Ringback

4.27 Emergency ringback is an optional service provided for the 911 lines by specifying the ringback option in the fourth word of the trunk class code translation. Emergency ringback cannot be provided for trunk originated calls. In response to an attendant request, the PSAP customer premises equipment generates a timed on-hook flash signal of approximately 500-ms duration. Timing (200 to 1100 ms) is done at the B911 office to interpret the signal. Emergency ringback may be initiated for either an on-hook or off-hook originating line to signal the calling party.

(a) *Off-Hook Ringback*—A PSAP attendant has no indication of the type of call origination (line or trunk) when the call is established and the originating line or trunk is off-hook. If emergency ringback is requested and an incoming trunk connection exists, the flash is absorbed and no change occurs on the talking connection. For emergency ringback to an off-hook originating line, a 3- to 4-second burst of receiver off-hook tone is connected to the originating line and one burst of audible ringing tone is connected to the 911 trunk. After this action is completed, the talking connection is restored. The attendant may flash and repeat the off-hook ringback if desired.

(b) *On-Hook Ringback*—Emergency ringback differs for individual and party lines as follows:

(1) For an individual line, when emergency ringback is initiated, the line is given regular ringing and the 911 line is given audible ringing tone. This condition will continue until either the originating line returns off-hook, the 911 line returns on-hook, or a 45-minute timeout occurs. If the originating line goes off-hook during ringback, the talking connection is reestablished. If the 911 line returns on-hook, all connections are released and the 911 line is idled. If neither of these two actions occurs within a 45-minute period, the connection is released and reorder tone (120 ipm) is connected to the 911 line until on-hook is received for the 911 line.

(2) When the originating line is a party line and ringback is requested, the party line

is given 2 seconds of ringing and the 911 line is given one burst of audible ringing tone. All lines on a party line will be rung during emergency ringback. After the party line on-hook emergency ringback cycle, the steady low tone is reconnected to the 911 line if the originating line is still on-hook. The attendant may flash again if desired and repeat the ringback cycle. If the originating line does not return off-hook or the 911 line does not return on-hook within a 45-minute period following the last emergency ringback request, the connection is released and the 911 line is given reorder tone (120 ipm) until the 911 line is released by the attendant and on-hook is received. Each time a request for emergency ringback is received, the 45-minute timing period is restarted. ·

B. Trunk Originated 911 Call

4.28 A trunk originated 911 call is completed in a similar manner as a line originated 911 call. The digits are received, collected and translated as for any incoming trunk call. After the PSAP DN is obtained the call is completed as described for a line originated 911 call. The resulting network connection is treated as an incoming trunk-to-line call connection. Ringing is connected to the 911 line and audible ringing tone is connected to the originating trunk. Figure 10 depicts a trunk originated 911 call.

4.29 If the 911 call originated from an office which absorbs the first digit (digit 9), the digit 9 is generated using the two digits (11) on incoming trunks feature. For example, a customer served by a step-by-step office dials 911 and the step-by-step office absorbs the digit 9. The two digits (11) on incoming trunks feature provides for the collection of two digits on incoming trunk groups prior to tandem digit analysis, which checks for the two digits 11. If the two digits are 11, tandem translations will cause the digit 9 to be inserted prior to the 3-digit translation. Generation of the digit 9 is uniquely determined according to the tandem trunk group number defined by the tandem table record translation.

4.30 Abandon prior to answer is discussed in paragraphs 4.20 and 4.21. Forced disconnect is discussed in paragraph 4.25. For forced disconnect, the 911 line is released immediately and on-hook is returned to the originating office.

Page 25

SECTION 231-090-287
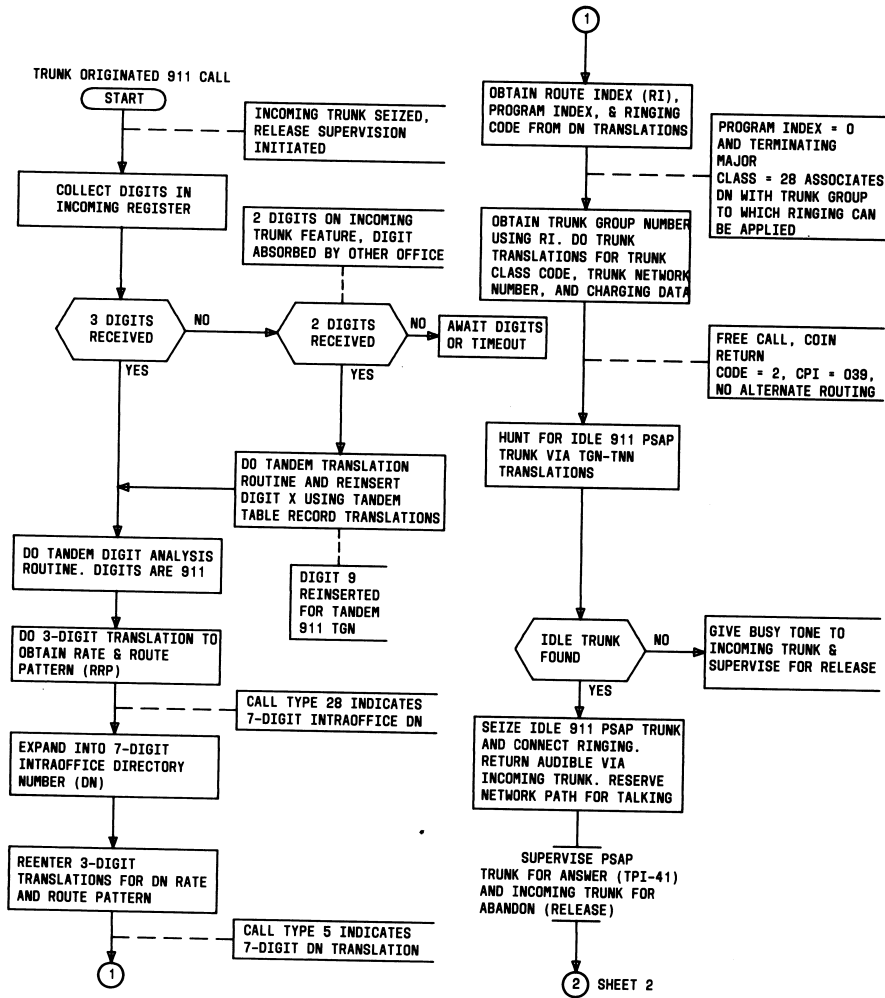

Fig. 10—Trunk Originated 911 Call Flow Diagram (Sheet 1)

Page 26
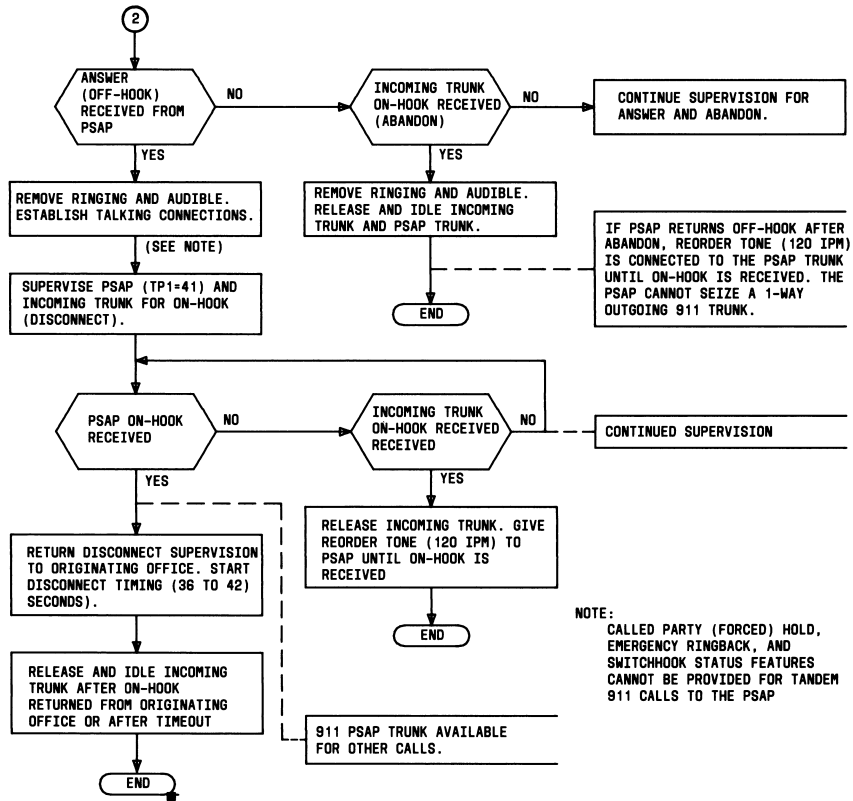
ISS 2, SECTION 231-090-287

Fig. 10—Trunk Originated 911 Call Flow Diagram (Sheet 2)

Page 27

If disconnect is not received within 36 to 42 seconds, the incoming trunk is automatically released. Called party hold, calling line status, and emergency ringback services are not provided for trunk originated 911 calls.

CHARACTERISTICS

5. FEATURE ASSIGNMENT

5.01 The B911 feature is available on a per system basis. A No. 1/1A ESS can serve one B911 PSAP per public rate center.

5.02 A B911 PSAP may be served by one or more telephone offices. Generally, if more than one B911 PSAP is required in a B911 service area, each PSAP will be served by a different office since most telephone offices typically serve only one public rate center.

6. LIMITATIONS

OPERATIONAL

6.01 The maximum number of 911 calls to a PSAP that can be established at any particular time depends on the number of 911 lines provided for that PSAP. Queueing is not provided for 911 calls to a busy PSAP. If all 911 lines are busy, busy tone is given the calling party.

6.02 Optional called party hold, switchhook status, and emergency ringback services cannot be provided for incoming 911 calls from other offices or customer premises switching equipment.

6.03 Selective routing, alternate routing, and central office transfer are not available with the B911 feature. The 8A Key Telephone System provides for transfer capabilities at the B911 PSAP customer premises.

ASSIGNMENT

6.04 A B911 PSAP having an 8A Key Telephone System may have up to twenty one-way incoming 911 lines; up to eight 2-way dial lines, tie lines, or any combination thereof; and up to eight CALL DIRECTOR telephone sets.

6.05 Only one B911 PSAP DN may be assigned per public rate center served by the B911 office.

Page 28

7. INTERACTIONS

STATIC

7.01 Not applicable.

DYNAMIC

7.02 The E911 feature affects the services available in a 911 service area previously having B911 service. For example, assume a B911 service area where each B911 PSAP is directly served by a separate local office and each B911 PSAP is provided the optional called party hold, switchhook status, and emergency ringback services. If part of the B911 service area later requires E911 service, the B911 PSAPs can become part of the E911 network. However, the B911 offices which directly served the B911 PSAPs become part of the E911 network as local offices and must route all 911 calls to the E911 tandem office, which then routes all 911 calls to the correct PSAP. In this case the B911 office no longer directly serves the B911 PSAP. The 911 call is completed via the E911 tandem office to the E911 PSAP. The optional services previously provided for the B911 PSAP are no longer available since tandem trunking is used to complete the 911 call. Thus E911 service may affect an existing B911 service area.

8. RESTRICTION CAPABILITY

8.01 Not applicable.

INCORPORATION INTO SYSTEM

9. INSTALLATION/ADDITION/DELETION

9.01 The B911 feature is available on a per system basis and does not require parameters or unique system hardware. The B911 PSAP customer premises equipment (8A Key Telephone System) must be available or installed at the customer premises. The line access trunk circuits SD-1A319-01 or -05 must be equipped for the 911 lines to the PSAP. Recent change (RC) messages are used to add, change, and/or delete translation information required for the B911 feature. For information regarding the 8A Key Telephone System, refer to items A(2) through A(8) in Part 18. Figure 11 is a flowchart for adding a B911 PSAP.

```
                    ┌─ START ─┐
                    └────┬────┘          ┌──────────────────────┐
                         ┆ ─ ─ ─ ─ ─ ─ ─ │ CUSTOMER PREMISES    │
                         ┆               │ EQUIPMENT INSTALLATION│
                         ┆               │ COMPLETE             │
                         │               └──────────────────────┘
            ┌────────────────────────┐
            │ INSTALL LINE ACCESS TRUNK│
            │ CIRCUITS (SD-1A319-01,  │
            │ OR -05)                 │
            └────────────┬───────────┘
            ┌────────────────────────┐
            │       RC:TG            │
            ├────────────────────────┤
            │ ADD AND VERIFY NEW      │
            │ TRUNK GROUP (TG) WITHOUT │
            │ MEMBER NUMBERS          │
            │ SECTION 231-118-323 (NO. 1)│
            │ SECTION 231-318-303 (NO. 1A)│
            └────────────┬───────────┘     ┌──────────────────────┐
                         ┆ ─ ─ ─ ─ ─ ─ ─ ─ │ VERIFY THE TRUNK GROUP│
                         ┆                 │ USING INPUT MESSAGE  │
                         │                 │ VFY-TKGN-14          │
            ┌────────────────────────┐     └──────────────────────┘
            │       RC:TRK           │
            ├────────────────────────┤
            │ EQUIP AND VERIFY TRUNK  │
            │ NETWORK NUMBERS (TNNs)  │
            │ SECTION 231-118-323 (NO. 1)│
            │ SECTION 231-318-303 (NO. 1A)│
            └────────────┬───────────┘     ┌──────────────────────┐
                         ┆ ─ ─ ─ ─ ─ ─ ─ ─ │ VERIFY THE TNNs USING │
                         ┆                 │ INPUT MESSAGES       │
                         │                 │ VFY-TNN-11 AND       │
                         │                 │ VFY-MSN-13           │
            ┌────────────────────────┐     └──────────────────────┘
            │       RC:TGMEM         │
            ├────────────────────────┤
            │ ASSIGN EQUIPPED TNNs TO │
            │ TRUNK GROUP ZERO        │
            │ SECTION 231-118-323 (NO. 1)│
            │ SECTION 231-318-303 (NO. 1A)│
            └────────────┬───────────┘
```

AUTOMATICALLY PLACES TNNs ON THE OUT-OF-SERVICE LIST AFTER ASSIGNING THE TNNs. THE TNNs WILL BE AVAILABLE FOR TESTING BUT NOT AVAILABLE FOR USE. THE TNNs MAY BE TESTED FROM THE TRUNK AND LINE TEST PANEL (TLTP) OR SUPPLEMENTARY TRUNK TEST PANEL (STTP) BEFORE BEING PLACED IN SERVICE

TEST TRUNK CIRCUITS AS REQUIRED

USE INPUT MESSAGE T-TNN-MB TO PLACE THE TRUNKS ON THE OUT-OF-SERVICE LIST

(1)

---

(1)

RC:TGMEM

ASSIGN EQUIPPED T... ACTIVE 911 TRUNK ...

SECTION 231-118-323
SECTION 231-318-303

CIRCUIT TESTING (RE... TNNs FROM THE OUT-O... LIST)

NO. 1 OR NO. 1A

NO.

CARD WRITE RECENT...

UPDATE PARAMETERS ... RECORDS FOR THE 911... GROUP

RC:CCOL

ENTER CHART COLU...

SECTION 231-118-32...
SECTION 231-318-30...

(2)

ISS 2, SECTION 231-090-287

Fig. 11—Flowchart for Adding a B911 PSAP

Page 29/30

Basic 911 Service / 1A ESS

10. HARDWARE REQUIREMENTS

COST FACTORS

10.01 Line access trunk circuits SD-1A319-01 or -05 are equipped for the outgoing 911 lines to the PSAP customer premises equipment. One line access trunk circuit SD-1A319-01 or -05 is equipped for each 911 line provided for a PSAP. The -05 circuit version is the miniaturized trunk circuit. Each equipped line access trunk circuit has one trunk link network (TLN) appearance and requires two supervisory scan points and five signal distributor (SD) points. Trunk order code 03900 (for SD-1A319-01) or 03902 (for SD-1A319-05) is applicable when reverse battery on-hook/off-hook supervision for the optional switchhook status is not required for the PSAP. Trunk order code 03901 (for SD-1A319-01) or 03903 (for SD-1A319-05) is applicable when reverse battery on-hook/off-hook supervision is required to provide the optional switchhook status for the PSAP.

DETERMINATION OF QUANTITIES

10.02 The number of outgoing 911 lines to a B911 PSAP is traffic engineered by the Business Services Facilities organization; however, the B911 customer decides how many simultaneous 911 calls a PSAP can handle. The customer decides the number of attendant positions to provide for a PSAP.

10.03 A minimum of two 911 lines should be equipped for each PSAP. Tariff regulations specify that a minimum of P.01 service be provided. This means that at peak demand, a maximum of one call per hundred could be blocked. The average busy season busy-hour load must be developed. After developing the busy-hour load per main station, the busy-hour load offered to a particular trunk group (of line access trunks for the 911 lines) can be calculated. As a minimum, the Wilkinson basic trunk capacity tables are used. Refer to item A(9) in Part 18.

11. SOFTWARE REQUIREMENTS

COST FACTORS

A. No. 1 ESS

Fixed

11.01 The following memory is required whether or not B911 service is provided.

- Generic (program store)—Approximately 1200 words existing in the base generic program are used.

Conditional

11.02 Not applicable.

Variable

11.03 The following program store memory is required for translations when B911 service is provided.

- DN translator—4 words per B911 PSAP DN

- RI expansion table—2 words per RI for the 911 line access trunk group

- TNN-to-TGN PTW—1 word per TNN plus 1 additional word if equipped for carrier group alarm (CGA)

- MSN PTW—2 MSN PTW words per 911 line access trunk circuit

- TCC expansion—4 words per trunk class code

- TGN translator—4 words per outgoing 911 trunk group

B. No. 1A ESS

Fixed

11.04 The following memory is required whether or not B911 service is provided.

• *Generic (program store and file store)*—Approximately 1500 words existing in the base generic program are used.

Conditional

11.05   Not applicable.

Variable

11.06   The following unduplicated call store and file store memory is required for translations when B911 service is provided.

- DN translator—4 words per B911 PSAP DN

- RI expansion table—2 words per RI for the 911 line access trunk group

- TNN-to-TGN PTW—1 word per TNN plus 1 additional word if equipped for carrier group alarm

- MSN PTW—2 MSN PTW words per 911 line access trunk circuit

- TCC expansion—4 words per trunk class code

- TGN translator—4 words per outgoing 911 trunk group

DETERMINATION OF QUANTITIES

11.07   Memory items are provided as stated above in COST FACTORS.

PROCESSOR TIME

11.08   The approximate real-time cycles required for a line-originated 911 call through disconnect are as follows:

- No. 1 ESS—4200 cycles

- No. 1A ESS—8400 cycles

11.09   The approximate real-time cycles required for a trunk-originated 911 call through disconnect are as follows:

- No. 1 ESS—3950 cycles

- No. 1A ESS—7900 cycles

11.10   The cycle time for a No. 1 ESS is 5.5 microseconds per cycle. The cycle time for a No. 1A ESS is 0.7 microsecond per cycle.

FEATURE DEFINING SET CARDS

11.11   Not applicable.

12.   DATA ASSIGNMENTS AND RECORDS

TRANSLATION FORMS

12.01   Record keeping forms used for the B911 feature are as follows:

- *ESS 1101—Directory Number Record:* The route index, program index, ringing code, and terminating major class are associated with the directory number assigned for 911 emergency service calls.

- *ESS 1201—Miscellaneous Trunk Frame Record:* The trunk group, trunk network number, trunk class code, CPD, SD, and MSN assignments are associated on this record.

- *ESS 1202—Trunk Group Record: ESS 1203 Trunk Network Number Record:* The trunk group number, trunk class code, trunk network number, and trunk order code are associated on these forms.

- *ESS 1204—Trunk Class Code Record:* Trunk class characteristics including emergency ringback and outgoing trunk to emergency service bureau are specified on this form.

- *ESS 1300—Three-Digit Translation:* The rate and route pattern is specified for the 911 code and subsequent 7-digit simulated directory number.

- *ESS 1303—Trunk and Service Circuit Route Index Record:* The TGN, coin return code (=2), free call (✔), option indicator (=01), and next route index (=stop) are specified for the assigned route index.

- *ESS 1304—Rate and Route Chart:* Regular (REGL) routing and charging (CHG=000) are entered for the chart and column assigned for 911 calls.

Basic 911 Service / 1A ESS

- *ESS 1305—Rate and Route Pattern Record:* Call type 28 is entered for the digits 911 which are expanded into a 7-digit intraoffice directory number. Call type 05 is entered for the expanded intraoffice directory number. The 7-digit directory number is associated with a route index number on the ESS 1101 form.

RECENT CHANGES

12.02 Standard recent change messages and keywords are used for B911 service to build the translations required for the trunks, trunk class codes, chart column, RI expansion, rate and route pattern, and DN translations. No new messages are required for these standard types of recent changes. The messages used for these types of recent changes are listed in Table C. For detailed RC procedures, refer to items A(10) through A(17) in Part 18.

13. TESTING

13.01 No special tests are used to verify that the B911 feature, per se, has been properly

assigned. Results of recent change messages used to enter the translation data are verified using the appropriate input messages specified in the particular RC procedures, items A(10) through A(17) in Part 18. For detailed information concerning input and output messages, refer to C(1) through C(4) in Part 18.

13.02 After the feature has been assigned, 911 calls can be made to assure that 911 calls are completed to the B911 PSAP and to verify the B911 PSAP optional services if provided.

14. OTHER PLANNING TOPICS

14.01 No special planning is required for the B911 feature per se. The planning required for 911 service depends on the type of 911 service, B911 or E911, and the customer options desired. General considerations are discussed in paragraphs 2.07 through 2.29.

TABLE C

RC MESSAGES FOR B911 SERVICE

TASK	RC MESSAGE
Add New TG Without Members	RC:TG
Equip TNN(s)	RC:TRK
Assign Equipped TNNs To Active TG	RC:TGMEM
Build TCC Expansion Table	RC:PSWD
Enter Chart Column Data	RC:CCOL
Add RI Expansion Data	RC:RI
Add Rate And Route Pattern Data	RC:RATPAT
Add RRP in 3-Digit Translator	RC:DIGTRN
Add DN Entry in DN Head Table	RC:DNHT
Build 911 DN Auxiliary Block	RC:LINE

Page 33

Basic 911 Service / 1A ESS

SECTION 231-090-287

ADMINISTRATION

15. MEASUREMENTS

15.01 No unique measurements are provided for the B911 feature. Standard traffic information is available for peg, usage, overflow, and maintenance counts based on the trunk group number assigned for the outgoing 911 lines using the line access trunk circuits. Traffic measurements are described in items A(18) and D(1) in Part 18.

16. CHARGING

AUTOMATIC MESSAGE ACCOUNTING

16.01 A 911 call is completed without charge to the originating station line. Charging is not required for 911 calls to a PSAP since dedicated 911 customer lines are used. Standard billing to the billing telephone number is done for PSAP 2-way dial lines, if provided for standard originating and terminating (non-911) telephone service.

UNIFORM SERVICE ORDER CODES (USOCs)

16.02 The USOCs used for the B911 feature are listed below according to the category. USOCs are used for the 8A Key Telephone System, line access trunks (911 lines), and the class of service.

A. 8A Key Telephone System

CODE	DESCRIPTION
91P++	Attendant Position—18-button set, includes call transfer and emergency ringback keys
91R++	Attendant Position—30-button set, includes call transfer and emergency ringback keys
98V	Call Transfer Feature—switching equipment to connect 911 lines to 2-way lines (initial unit)
98W	Call Transfer Feature—switching equipment to connect 911 lines to 2-way lines (additional unit)
98A	Common Equipment (initial unit)
98C	Common Equipment (auxiliary unit)
98R	Emergency Power (initial unit)
98Z	Emergency Power (auxiliary unit)
91S	Emergency Ringback Feature
98H	Line Termination Unit—incoming 911 line
98O	Line Termination Unit—2-way dial line including transfer circuit
98J	Line Termination Unit—2-way tie line including transfer circuit
98X	Line Transfer Units (manual)
98Y	Line Transfer Units (dial)
98D	Power Supply (initial unit)
98G	Power Supply (auxiliary unit)
91Z	Switchhook Status Feature
91Y	Switchhook Status Feature (additional)

B. 911 Line Access Trunks

CODE	DESCRIPTION
TGZ	Universal emergency number service 911 trunk
9XL	Universal emergency number service 911 trunk (additional)

C. Line Class of Service

CODE	DESCRIPTION
91L	Universal emergency number service 911 (with instrument)
91M	Universal emergency number service 911 (without instrument)
91K	Universal emergency number service 911 (hunting or key line with instrument)

Page 34

Basic 911 Service / 1A ESS 38

Basic 911 Service / 1A ESS

91W   Universal emergency number service 911 (hunting or key line without instrument)

SUPPLEMENTARY INFORMATION

17. GLOSSARY

Attendant   A person, situated at a position on a customer's premises, who serves customer calls.

Attendant position   The equipment from which calls requiring assistance can be answered and completed by the attendant.

Business customer   A customer requiring other than basic telecommunications service. A business customer is provided one or more attendant positions. Optional telecommunication services may be provided for a business customer. The services provided are based on the business customer's requirements.

Called party hold   An optional B911 customer service which enables the B911 PSAP attendant to retain control of the network connection established for a 911 call originated from a customer line which is served by the same office which serves the B911 PSAP. This service is not available for incoming 911 calls via trunks at the office providing B911 service.

Emergency ringback   An optional B911 customer service which enables the B911 PSAP attendant to ring back a customer line from which a 911 call was complete regardless of the switchhook status of the originating station. Called party hold is a prerequisite for this service. Emergency ringback is not available for incoming 911 calls via trunks at the office providing B911 service.

Forced disconnect   Forced disconnect is a standard service with the B911 feature to allow a PSAP attendant to release any 911 call even though the calling party has not hung up. This service is provided to prevent dedicated 911 lines from being tied up or jammed.

Municipality   A municipality is primarily an urban political unit having corporate or other recognized status with the power of self-government. As used within this document, a municipality may be a town, city, county, or any other recognized community, area, or district having certain governmental powers and authority.

Public service answering point (PSAP)   A PSAP is an agency or facility designated by a municipality to receive and handle 911 emergency calls.

Switchhook status   An optional B911 customer service which allows the B911 PSAP attendant to visually monitor (by means of supervisory lamps) the switchhook status of a station from which a 911 call is completed. Switchhook status is not available for incoming 911 calls via trunks at the office providing B911 service.

18. REFERENCES

A. Bell System Practices

(1) Section 231-090-288—Feature Document— Universal Emergency Service Number 911 Feature Expanded 911 Service 2-Wire No. 1 and No. 1A Electronic Switching Systems

(2) Section 981-226-110—8A Key Telephone System for Use at 911 Emergency Answering Bureaus Basic Service General Description

(3) Section 473-310-101—8A Key Telephone System for Use at 911 Emergency Reporting

Page 35

Bureaus—CALL DIRECTOR Telephone Set—Identification (when published)

(4) Section 473-310-102—8A Key Telephone System for Use at 911 Emergency Reporting Bureaus—CALL DIRECTOR Telephone Set—Trouble Locating (when published)

(5) Section 473-310-103—8A Key Telephone System for Use at 911 Emergency Reporting/Answering Bureaus—CALL DIRECTOR® Telephone Set—Method of Operation

(6) Section 473-310-110—8A Key Telephone System for Use at 911 Emergency Reporting/Answering Bureaus—Installation and Connections

(7) Section 473-310-100—Public Emergency Reporting Systems—Identification, Installation, Connections, and Maintenance

(8) Section 812-275-150—8A Key Telephone System 911 Emergency Reporting System Equipment Design Requirements—Station Systems

(9) Section 780-402-210—Basic Trunk Tables—Wilkinson B and $\overline{B}$ Tables, Trunk Engineering, Network Operations Methods

(10) Section 231-118-323—Trunk Translation Recent Change Procedures for TG, TGBVT, TRK, CFTRF, and TGMEM (CTX-6 Through 1E5 Generic Programs)—2-Wire No. 1 Electronic Switching System With HILO 4-Wire Feature

(11) Section 231-118-324—Rate and Route Translation Recent Change Procedures for NOCNOG, DNHT, NOGRAC, RATPAT, DIGTRN, TOLDIG, CCOL, RI, CHRGX, DITABS, TNDM, IDDD, and TDXD (CTX-6 Through 1E5 Generic Programs)—2-Wire No. 1 Electronic Switching System

(12) Section 231-118-325—RC Procedures for PSWD, GENT, PSBLK, SUBTRAN, (CTX-6 Through 1E5 Generic Programs)—2-Wire No. 1 Electronic Switching System With HILO 4-Wire Feature

(13) Section 231-318-303—Trunk Translation Recent Change Procedures for TG, TGBVT, TRK, CFTRK, and TGMEM (Through 1AE4

Generic Program) 2-Wire and HILO 4-Wire No. 1A Electronic Switching System

(14) Section 231-318-304—Rate and Route Translation Recent Change Procedures for NOCNOG, DNHT, NOGRAC, RATPAT, DIGTRN, TOLDIG, CCOL, RI, CHRGX, DITABS, TNDM, IDDD, and TDXD (Through 1AE4 Generic Program)—2-Wire No. 1A Electronic Switching System

(15) Section 231-318-305—RC Procedures for PSWD, PSBLK, SUBTRAN, and GENT (Through 1AE4 Generic Program)—2-Wire and HILO 4-Wire No. 1A Electronic Switching System

(16) Section 231-118-335—Line Recent Change Procedures for LINE, TWOPTY, MPTY, SCLIST, MLHG, ACT, and CFV—CTX-7, CTX-8, 1E4, and 1E5 Generic Programs—2-Wire No. 1 Electronic Switching System

(17) Section 231-318-302—Line Recent Change Procedures for LINE, TWOPTY, MPTY, SCLIST, MLHG, ACT, and CFV (Through 1AE5 Generic Program)—2-Wire No. 1A Electronic Switching System

(18) Section 231-120-301—Traffic Measurements—2-Wire No. 1 Electronic Switching System.

B. **General Letters**

(1) GL73-04-203—Office of Telecommunications (OTP) National Policy for Emergency Telephone Number 911

(2) GL73-05-121—Rate Considerations Involved in Providing Basic 911 Service

(3) GL73-09-013—No. 1 ESS—Development of New Features for Universal Emergency Service Number 911

(4) GL73-10-060—911 Emergency Service Recommended Rate Treatment of the 911 Emergency Service Trunk

(5) GL74-04-149—No. 1 ESS—Development of New Features for Universal Emergency Service Number 911

Basic 911 Service / 1A ESS

(6) GL74-12-121—911 Emergency Service— Additional Information on 911 CO Equipment Including No. 2 ESS and Crossbar Tandem

(7) GL75-05-039—8A Key Telephone System for Basic 911 Service

(8) GL76-08-292—Marketing of 911 Emergency Service

(9) GL76-09-034—Rate & Tariff Guidelines for the 8A Key Telephone System for Use With Basic 911 Service

(10) GL77-07-045—Operating Instruction Manual for 8A Key Attendant's Position

(11) GL77-09-023—Illustrative Tariff for Universal Emergency Number Service (Basic 911)

(12) GL77-09-171—Expanded 911 Emergency Service—System Description

(13) GL78-08-247—Expanded Universal Emergency Service (E911)

(14) GL77-11-200—Detailed Information on Conversion of Traffic Facilities Practices

and Dial Facilities Practices to the Bell System Practices Series.

C. TTY Input and Output Manuals

(1) Output Message Manual OM-1A001, No. 1 Electronic Switching System

(2) Output Message Manual OM-6A001, No. 1A Electronic Switching System

(3) Input Message Manual IM-1A001, No. 1 Electronic Switching System

(4) Input Message Manual IM-6A001, No. 1A Electronic Switching System.

D. Other Documentation

(1) Translation Guide TG-1A

(2) Translation Output Configuration PA-591003, No. 1 Electronic Switching System

(3) Translation Output Configuration PA-6A002, No. 1A Electronic Switching System

(4) Trunk and Service Circuit Engineering Specification J1A063A-1, No. 1 Electronic Switching System.

Testing Meridian Business Sets Using Predictor

Ameritech DMS, #5 ESS and Siemens central offices can provide a Centrex service that the rest of the central offices can't offer, called Integrated Information Network or IIN (Ameritech Digital Centrex).

This service allows the use of a new type of telephone called a Meridian Business Set (MBS). However, the MBS can only be used in a DMS−type office. What's unique about the MBS is a special "line card" (LEN) in the central office associated to the MBS's Primary Directory Number (PDN). The "line card" allows 56 separate telephone numbers to be assigned to a single cable pair.

IIN service with Meridian Business Sets are not Mechanized Loop Test (MLT) testable. Predictor is the vehicle that must be used when testing under these conditions.

Predictor is a computer based system that collects data from various systems where preset thresholds are involked to determine probable areas of trouble in the outside plant environment. Predictor is part of the Automated Repair Service Bureau (ARSB) environment.

The following will be flow charts, sign−on and sign−off procedures, testing sequences and explanations for testing IIN MBS lines.

Basic MBS Trouble Report Flow

1. **Customer** Customer has trouble with their MBS. Calls their Communications Representative. Comm. Rep. calls the Centralized Repair Service Answering Bureau (CRSAB).
2. **CRSAB** Repair Service Attendant (RSA) must get PDN on Key #1. Report is taken by asking specific questions.
3. **DSOC** Distribution Service Operations Center (DSOC) analyzes, tests, verifies, dispatches, refers and/or closes out report.
4. **Customer** The customer is notified of trouble dispatch, referral and/or closure of trouble report.

Sign−On/Off and Request Information

1. DSOC analyzes the customer's trouble report and verifies and tests through Predictor.
2. Sign−on to the Predictor and DMS systems.
3. In Predictor, sign−on to Maintenance Administrative Position Command Interrogator (MAPCI).
4. Perform MAPCI tests using the sequence shown.
5. Based on results – dispatch, refer, clear, close.
6. Communicate with the customer.

MAPCI Test Sequence Introduction

- ♦ **SUSTATE** Sustate – Checks MBS and add–ons and extensions with add–ons.
- ♦ **CKTTST** Circuit Test – Checks MBS and internal components.
- ♦ **LNTST** Line Test – Checks the facilities.
- ♦ **DIAG LC** Diagnostic Line Card – Checks line card operation.
- ♦ **DIAG** Diagnostic Full – Full test.

Basic MBS Trouble Report Flow – CRSAB

To assist the DSOC in analyzing the customer's trouble report, the RSA should ask the customer the following questions:

1. Primary Directory Number on Key 1.
2. Location of the Business Set.
    ◊ Floor
    ◊ Room
    ◊ Desk
3. Complete description of the problem.
    ◊ Time problem occured.
    ◊ What number(s) was the customer talking to and who called who?
    ◊ Does the problem occur all the time or at times?
    ◊ Does the problem occur while using a feature?
    ◊ Etc.
4. Handle Code.
5. Contact name and number.
6. Time received and commitment.
7. Send to DSOC.

Note – When received, make sure that the report is not involved with a cable trouble or service order activity.

Sign–On/Off Procedure for Predictor and DMS

MBS are unique in that you can't test them with Loop Maintenace Operations System (LMOS). <u>MBS will test as a short or open</u> depending on the customer's equipment that is associated with the MBS. MBS troubles must be tested using Predictor. The following is the sign–on procedure to be used to verify and test MBS lines.

AT&T 6500 Terminal Sign–On –

1. Obtain session that contains Predictor (usually D)
2. Depress `Command` key
3. Cursor to `CH` (Change Host)
4. Depress `Enter` key
5. Cursor to `ASYNC MODEM`
6. Depress `Enter` key
7. Check `CAPS LOCK` (will use lower case)
8. Depress `PF3` for `Modem/Dial`
9. Depress `PF2` for `Select`
10. Enter Predictor dial–up telephone number

11. Depress `PF1`
12. At `login:` enter `ver` (lowercase)
13. At `Password:` enter `VER` (uppercase)
14. Enter terminal `VT100`
15. Response will be a `$`

At this point you are now signed−on to Predictor.

1. Enter `Query`
2. Enter Switch I.D. (Wire Center's lowest NXX).
3. Response will be a `?`
4. Enter `login`
5. At `User Name:` enter `LOCTST`
6. At `Password:` enter `LOCTST`

At this point you are now signed−on to the DMS switch.

Verify Directory Number (QDN) and LEN (QLEN). Testing is also done at this level.

AT&T 6500 Terminal Sign−Off –

1. Enter `logout`
2. Response will be `Bye Bye`
3. Depress `Shift` and the number 6
4. Change Host (CH)

MBS will only work in a DMS−type office. Since MLT cannot be used to properly test MBS, Predictor is your only vehicle for testing. To test MBS with Predictor, you must gain access to the various "maintenance levels" in the DMS switch. The Maintenance Level Flow Chart is shown below.
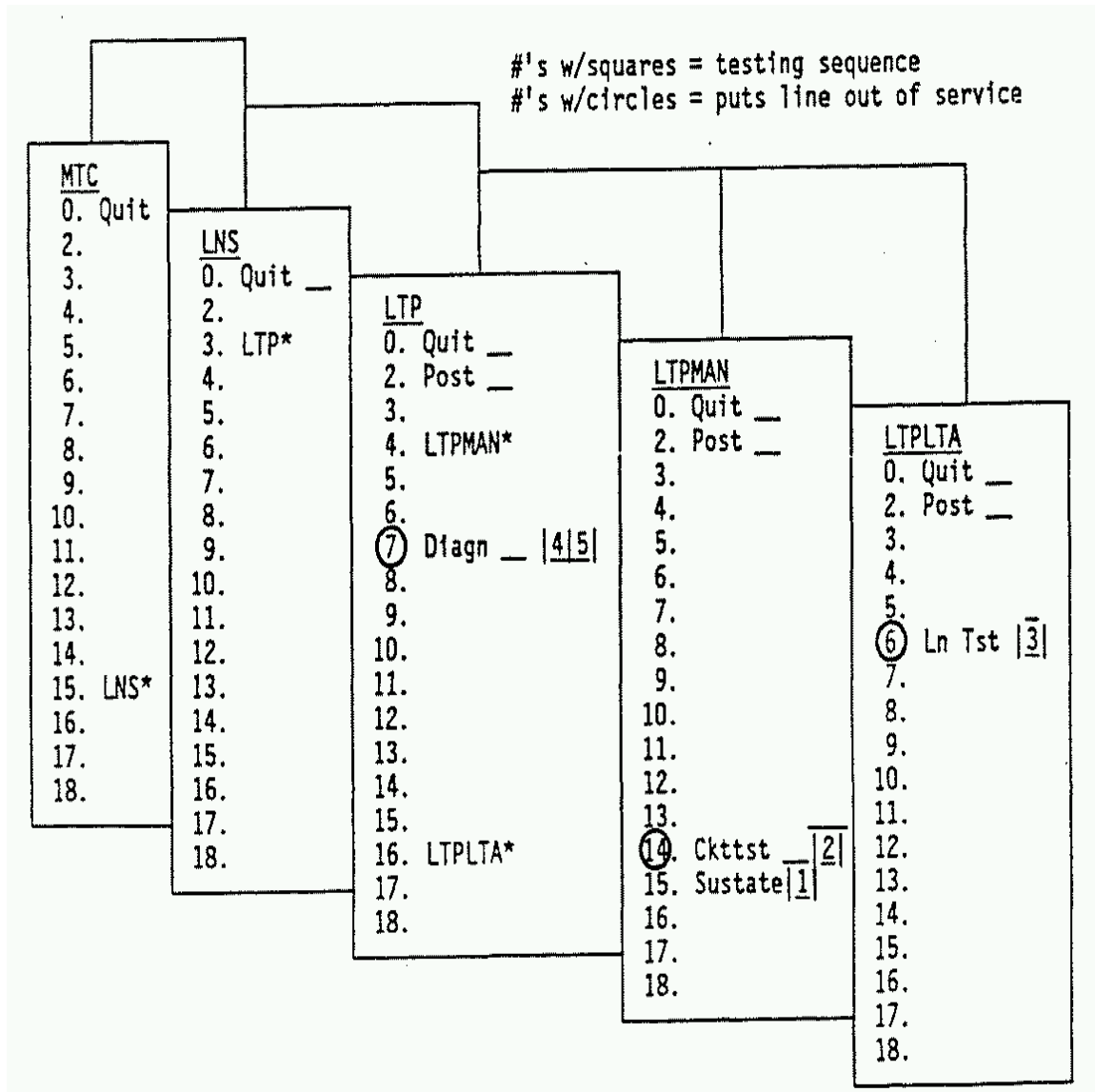
The various Maintenance Levels are:

♦ MTC = Maintenance
♦ LNS = Lines
♦ LTP = Line Test Position
♦ LTPMAN = Line Test Position Manual
♦ LTPLTA = Line Test Position Line Test Access

To sign onto each of the Maintenance Levels, enter the following:

1. Enter `MAPCI`
2. Response `MAPCI:`
3. Enter `MTC`
4. Response `MTC:`
5. Enter `LNS`
6. Response `LNS:`
7. Enter `LTP`
8. Response `LTP:`

Once access is gained to the DMS switch, you now have access to various tests located within the levels you sign−on to. There are five tests that must be performed on all trouble reports. These tests are addressed next.

```
                                    #'s w/squares = testing sequence
                                    #'s w/circles = puts line out of service

 MTC
 0. Quit
 2.          LNS
 3.          0. Quit __
 4.          2.          LTP
 5.          3. LTP*     0. Quit __
 6.          4.          2. Post __      LTPMAN
 7.          5.          3.              0. Quit __
 8.          6.          4. LTPMAN*      2. Post __     LTPLTA
 9.          7.          5.              3.             0. Quit __
 10.         8.          6.              4.             2. Post __
 11.         9.          ⑦ Diagn __ |4|5| 5.            3.
 12.         10.         8.              6.             4.
 13.         11.         9.              7.             5.
 14.         12.         10.             8.             ⑥ Ln Tst |3|
 15. LNS*    13.         11.             9.             7.
 16.         14.         12.             10.            8.
 17.         15.         13.             11.            9.
 18.         16.         14.             12.            10.
             17.         15.             13.            11.
             18.         16. LTPLTA*     ⑭. Ckttst __|2| 12.
                         17.             15. Sustate|1| 13.
                         18.             16.            14.
                                         17.            15.
                                         18.            16.
                                                        17.
                                                        18.
```

Note − Capital letters indicate other menus. Regular letters indicate the tests.

Lines in use will show − `line state in-appropriate,` or `line state invalid.`

MAPCI Test Sequence Procedures

To properly analyze and test MBS trouble reports, the following tests must be run in sequence. Any deviation could result in improper analysis and tests, and possibly even an irate customer.

To begin the testing sequence, you should have a printed copy of the Primary Directory Number (PDN) by using the Query Directory Number (QDN) command and a copy of the Line Equipment Number (LEN) information by using the Query Line Equipment Number (QLEN) command.

Note – When testing, turn on printer just prior to and at completion of testing.

To test a line, you must first "POST" the LEN, i.e., `POST L XX X XX XX`. If you POST the Directory Number, you may get the Primary appearance of the Multiple Appearance Directory Number (MADN) LEN. Now you are ready to perform the following test:

SUSTATE

This test is the first of five tests to be performed on the customer's line. It will verify that the MBS and add−ons are responding to each software condition assigned. To begin, select `SUSTATE` from the `LTPMAN` menu:

Type in `LTPMAN`
Response `LTPMAN:`
Type in `SUSTATE`

Note – Do not enter the Directory Number if the line in trouble is a MADN because the switch may enter the incorrect LEN and thus you would have the wrong telephone number. Upon successful entry your response should be:

```
ADDRESS        0   1   2   3   4   5   6   7
DATA FILLED    .   _   _   _   _   _   _   _
RESPONDING     .   _   _   _   _   _   _   _

. = What is programmed in the switch for a directory number for an address

_ = Switch doesn't recognize the MBS equipment responding or the switch
    hasn't been programmed for a directory number for each address.
```

In other words, this is a comparison between what's programmed in the switch and what's in the field.

Example of improper response:

```
ADDRESS        0   1   2   3   4   5   6   7
DATA FILLED    .   .   _   _   _   _   _   _   (MBS w/add-on)
RESPONDING     .   _   _   _   _   _   _   _   (Add-on not responding)
```

Note A – When an address (0−3) has a (.) under it, it would indicate the following:

- ♦ DATA FILLED Address 0 = Main station on MBS
- ♦ DATA FILLED Address 1 = First add−on module
- ♦ DATA FILLED Address 2 = Second add−on module
- ♦ DATA FILLED Address 3 = Third add−on module
- ♦ RESPONDING Address 0 = MBS online and appears to be working
- ♦ RESPONDING Address 1 = Module online and is responding
- ♦ RESPONDING Address 2 = Module online and is responding
- ♦ RESPONDING Address 3 = Module online and is responding

Note B – When an address (4–7) has a (.) under it, it would indicate the following:

- ♦ DATA FILLED Address 4 = Extension MBS in software
- ♦ DATA FILLED Address 5 = First module on extension MBS
- ♦ DATA FILLED Address 6 = Second module on extension MBS
- ♦ DATA FILLED Address 7 = Third module on extension MBS
- ♦ RESPONDING Address 4 = Extension MBS online and appears to be working
- ♦ RESPONDING Address 5 = First module on extension responding
- ♦ RESPONDING Address 6 = Second module on extension responding
- ♦ RESPONDING Address 7 = Third module on extension responding

Note C – Further action my be required based on `SUSTATE` results.

- ♦ Response – No data filled but field responding.
- ♦ Action – Check station records. Is there suppose to be something in the field or is the software incorrect?

- ♦ Response – Data filled but no response from MBS.
- ♦ Action – Perform `CKTTST` (Circuit Test).

Note D – The `SUSTATE` test should be performed 5 times in succession to ensure proper responses from MBS.

Enter `Repeat 5(SUSTATE)`

Note E – At times you may encounter an "ERROR". Be sure to read what the error message is. In most cases, when you go to reenter your request, do not retype the command. The switch already knows what command you entered so just reenter the DN or LEN.

If you make an error for the "command" entry, i.e., `QND` instead of `QDN`, you get an error message directed to the command.

CKTST – Circuit Test

This is the second of five tests to be performed on the customer's line. It will verify that the components or computer chips of the MBS are working properly. To begin, select `CKTTST` from the `LTPMAN` menu:

Type in `CKTTST`

The switch will respond in the following manner:

```
Messages Sent = 10
Messages Received = 10
```

The results are an indictator that the MBS is responding correctly to messaging. The test signals are addresses internal to the MBS and each message sent expects proper responses from each component in the MBS. If the results are not equal (10 and 9), the MBS is defective and should be replaced. Refer the customer to their vendor.

Note A – This test must be performed 5 times to ensure proper operation of the internal components of the MBS.

Enter `Repeat 5(CKTTST)`

Note B – Messaging is sent to the MBS at 8 kHz from the line card in the central office. Messages are sent out on the ring side of the facilities and returned on the tip side.

LNTST – Line Test

This is the third of five tests to be performed on the customer's line. It will verify and test the loop facilities. To begin, select `LNTST` from the `LTPMAN` menu:

Type in `LNTST`

The switch will respond in the following manner:

```
             RES        CAP      VAC    VDC
TIP          999.K      2.055UF   0      0
RING         999.K      1.055UF   0      0
TIP to RING  999.K      1.005UF   0      0
```

The above results could indicate an open ring side out in the field.

```
             RES        CAP      VAC    VDC
TIP          999.K      5.00UF    .5     .5
RING         999.K      5.00UF    0      0
TIP to RING  999.K      5.00UF    0      0
```

The above results could indicate a faulty MBS or facility problem. VAC and VDC should be zero.

```
             RES        CAP      VAC    VDC
TIP          999.K      5.00UF    0      0
RING         10.K       5.00UF    0      0
TIP to RING  500.K      5.00UF    0      0
```

The above results could indicate a ground on the line.

```
             RES        CAP      VAC    VDC
TIP          500.K      0.00UF    0      0
RING         500.K      0.00UF    0      0
TIP to RING  10.K       0.00UF    0      0
```

The above results could indicate a short on the line.

```
             RES        CAP      VAC    VDC
TIP          999.K      2.86UF    0      0
RING         999.K      4.79UF    0      0
TIP to RING  999.K      5.00UF    0      0
```

The above results could indicate a Non–Display MBS.

Note B – Perform this test only once. Repeated tests will reduce the capacitance.

Note C – Mark down what a good test looks like to various customers.

DIAG LC – Diagnostic Line Card

This is the fourth of five tests to be performed on the customer's line. It is used to test the operation of the line card located in the central office that is assigned to the customer's LEN. To begin, select `DIAG` from the `LTPMAN` menu.

Type in `DIAG LC`

The results may look like the following:

```
Attempting to Diagnose Line Card only
MILWWI13DS0***+LINE 100 JAN 25 08:56:49 4700 PASS LN_DIAG
     LEN HOST 01 1 17 14  DN 2270077
     DIAGNOSTIC RESULT  CARD DIAGNOSTIC OK
     ACTION REQUIRED NONE
     CARD TYPE 6X21AC
```

If the line card test "fails", you should do the following:

1. Change the line card. (first priority)
2. Check facilities.

DIAG – Diagnostic

This test is the last test to be performed on the customer's line. It will test the entire line. To begin, select `DIAG` from the `LTPMAN` menu.

Type in `DIAG`

The DIAGNOSTIC test looks at the following items:

- ♦ Facilities
- ♦ Line Card
- ♦ Interaction of Electronics
- ♦ Microprocessor
- ♦ Chips
- ♦ Proper Key Response
- ♦ Key Pad Operation
- ♦ Display

The result may look like the following:

```
MILWWI13DS0***+LINE 100 JAN 25 09:04:01 9000 PASS LN_DIAG
     LEN HOST 01 1 17 14  DN 2270077
     DIAGNOSTIC RESULT CARD DIAGNOSTIC OK
     ACTION REQUIRED NONE
     CARD TYPE 6X21AC
```

If the results are as indicated above, verify with customer.

Mossad–style Assassination Cellular Phone

 <-----> -----> ----->

There is alot of evil and hatred in the world today. Eurinals, Canadians, Democrats, Mexicans, Russians, Muslims, 2600 subscribers, Slashdot posters, etc. Thankfully, there are still some people around who "get" it.

Israeli domestic (Shin Bet) and foreign (Mossad) security doesn't put up with any crap from camel–humpers. They attack the source of the problem quicky and with directed force. That was the scene January 6, 1996 when a bomb planted inside the cellular phone of Yehiya "The Engineer" Ayyash exploded – sending his Hamas loving brains straight to hell.

Now, you to can also enjoy this satisfaction with your own little Touch–Tone® (DTMF) controlled exploding cellular phone. It should be noted that this phone doesn't really explode, it just lights a LED when it receives a steady burst of the DTMF "A" key (697 Hz & 1633 Hz). Consult your local Mosque for more information on explosives.

The California Microdevices CM8870 DTMF decoder IC is connected to the cellular handset speaker's positive (+) lead. The 100k resistors may need to be lowered if the speaker volume is too low for proper DTMF digit detection. The CM8870's 4–bit logic output is run into a 74HC138 3–to–8 line decoder IC. This transforms the 4–bit output of the CM8870 into a single control line. This line will go *LOW* on the 74HC138 when enabled. A simple logic inverter or pass transistor may be needed depending on your external drive requirements.

A quirk in this design is that the output control line is sometimes "enabled" briefly while powering the phone down. Be sure to test everything ahead of time.

To use the new DTMF detection circuitry, call the cellular phone's number. When the called party answers, press the "A" key on your DTMF keypad. Most normal phone's don't have that key (or the B, C, or D keys) so you may need to purchase or build a full 16–key DTMF keypad. The use of a non–conventional DTMF tone was chosen to help prevent any false detections.

It is also possible, on analog cellular networks, to transmit the DTMF tone over the cellular phone's receive (cell site downlink) frequency. Just scan out the phone's transmit frequency, add 45 MHz, then transmit your tone on that new frequency. The GBPPR Cellular Phone Talk–Over is a device which you can build to do just this – and alot more.

Internal view of a "bugged" Motorola TeleTac 250.
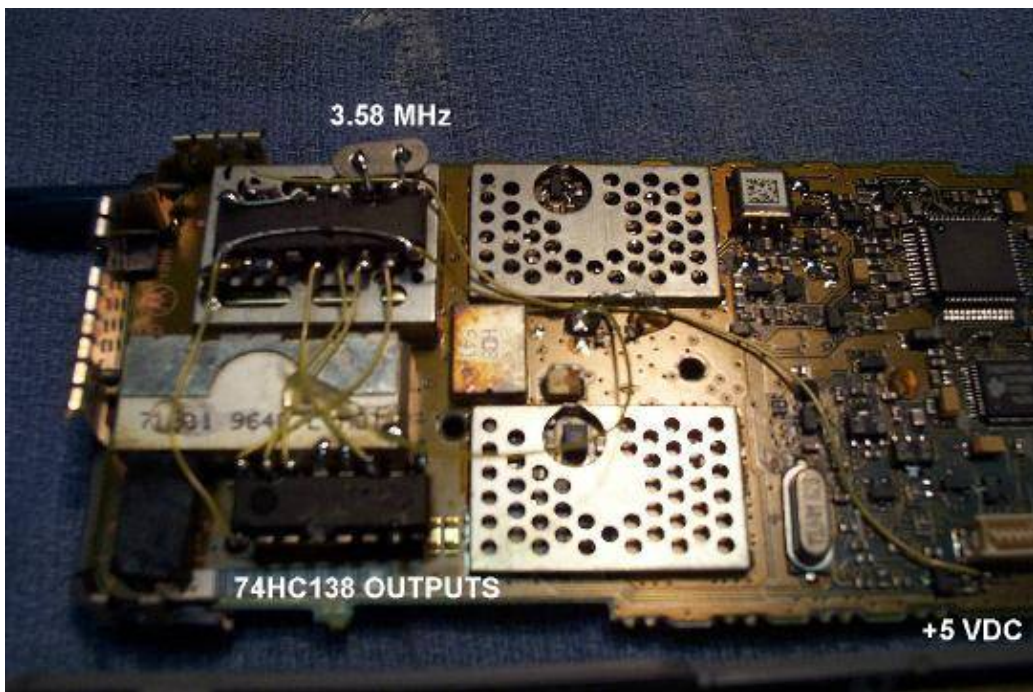
Closeup picture of the CM8870 (top IC) and the 74HC138 (bottom IC) mounted "dead–bug" style on the duplexer. The yellow wire leading off to the bottom right is a +5 VDC tap, on the PC board connector. The metal of the duplexer can be used for the ground.
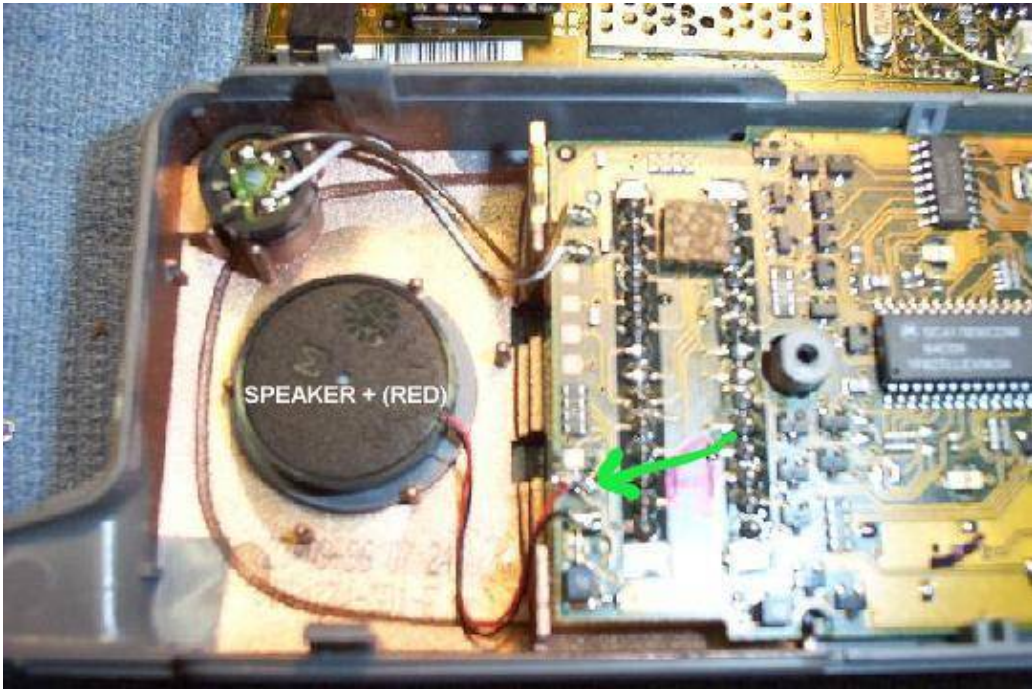
Phone's speaker area. Lots of room to work with. The RED lead going to the speaker is the positive (+) lead. Tap the audio input from its exposed PC board solder pad.

Mossad-style Assassination Cellular Phone
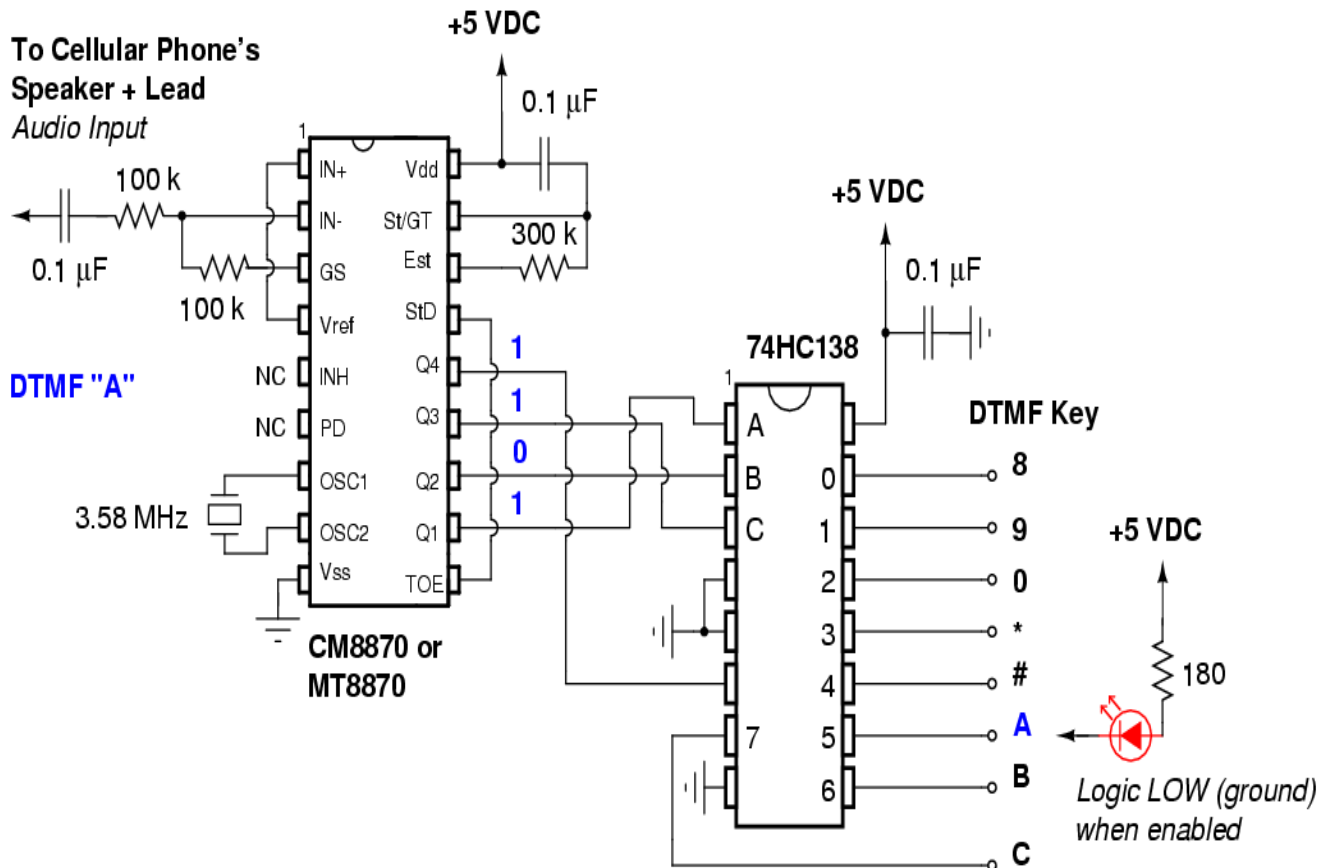
Ameritech Planning & Engineering Systems

This is a continuation of the Ameritech Maintenance and Record Keeping Systems article from GBPPR 'Zine, Issue #1.

#5ESS Digital Ordering and Planning System (5EDOPS)

Assists in determining the timing, costs and quantities of central office equipment for the #5 ESS. Developed by AT&T.

Construction Budget Administration System (CBAS)

An engineering tool developed to monitor installation schedules and capital budgets. Developed by AT&T.

Central Office Equipment Engineering System (COEES)

Assists in determining the timing, cost and quantities of central office equipment required for the #1 ESS, #1A ESS, #2 ESS, #2B ESS, #5 Crossbar and Step−by−Step switching machines. Developed by AT&T.

Central Office Equipment Reports (COER)

Provides traffic data measurements using Engineering and Administrative Data Acquisition System (EADAS) inputs.

Local Switching Demand and Facility Database (LSD&F)

Provides planning, sizing and timing of central office switching equipment addition. Provides evaluation, analysis, budgeting and management of the local dial switch planning and provisioning process. Developed by Bellcore.

Northern Telecom PC (NT ACCESS)

Assists in pricing Northern Telecom (Nortel) digital switching equipment.

Special Services Forecasting System (SSFS)

Used for the demand for special services. It draws historical circuit information from the TIRKS C1 inventory and makes simple projections based on historical demand. Developed by Bellcore.

Total Network Data System / Trunking (TNDS/TK)

Mechanized method of validating, processing and managing traffic data for the telephone network.

Major Apparatus and Cable System (MABS)

Provides tracking of cable and major outside plant inventory. Developed by Bellcore.

Plug–In Inventory Control System / Detailed Continuing Property Record (PICS/DCPR)

Controls and reports the acquisition, movement, utilization, repair and retirement of plug–in equipment and portable test sets. Provides a detailed description of central office equipment investments. This includes hard–wired plug–in equipment. Developed by Bellcore.

Capital Utilization Criteria (CUCRIT)

Provides a cash flow and financial analysis model designed to measure the economic impact of a proposed project or the incremental difference between a set of mutually exclusive alternatives. Developed by Bellcore.

Facility and Equipment Planning System (FEPS)

Provides circuit forecast, current routes, future routing strategies, security and circuit equipment profiles. Developed by Bellcore.

Planning Work Station (PWS)

PWS in an online, menu driven system with high resolution interactive graphics capability with direct access to planning data in the TIRKS E1, F1, FEPS and SCS areas for a five year planning period. Module of FEPS.

Scheduling Coordination System (SCS)

SCS is a scheduling and coordination system which contains facilities and equipment data to time and size the interoffice networks within a five year window. Module of FEPS.

Loop Activity Tracking Information System (LATIS)

This system tracks loop plant activities that represent potential or actual problems in the loop network. Developed by Bellcore.

Loop Engineering Information System (LEIS)

LEIS is an integrated system comprised of eight subsystems which provide data access as well as complex analysis of the loop feeder network. Developed by Bellcore.

Computerized Administration Route Layout (CARL)

Generates administrative route layouts for use in feeder administration. Module of LEIS.

Digital Line Engineering Program (DILEP)

Provides the design calculations necessary to properly design T1 repeater spacing for a loop feeder route. Module of LEIS.

Economic Study Module

Provides CUCRIT and other detailed economic analysis of outside plant alternatives utilizing a common cost deck.

Loop Activity Data (LAD)

Relational database of information extracted from LATIS. Provides a set of standard reports and the capability for the user to customize reports. Module of LEIS.

Loop Engineering Assignment Data (LEAD)

Provides access to recent assignment in formats which are efficient for engineers and planners without affecting the order flow of the assignment systems. Module of LEIS.

Loop Electronic Inventory Module (LEIM)

Provides a mechanized inventory of subscriber loop electronics and connections in the outside plant network. Module of LEIS.

Planning Subsystem (PLAN)

Generates an optimized plan for feeder routes utilizing data from other LEIS subsystems as well as user input. These plans provide the optimum deployment of copper, digital loop carriers and fiber optic technology within a feeder route. Module of LEIS.

#4 ESS Equipment Engineering System (4ESEES)

Assists engineering personnel to size, price and provide peak hour and busy hour power drains for #4 ESS. It also prepares the equipment order.

#5 Crossbar Central Office Equipment Reports (5XBCOER)

Provides traffic data measurements using EADAS inputs.

Advanced Material Information Record (AMIR)

System provides support for construction budget material requirements by providing AT&T maintained codes for material planning and advanced order data.

Air Pressurization Analysis Program (AIRPAP)

Provides assistance in the design of a complete pressurization plan.

Ameritech Integrated Records System (AIRS)

An automation of the process required to create an Engineering Work Order (EWO) for outside plant engineering and to maintain computer stored engineering records.

Construction Administration and Management Plan (CAMP)

Job administration system that tracks an EWO from the time it is drawn, through construction, and until the job is closed out. Used only in Indiana.

Central Office Engineering Management System (COEMS)

A mechanized system handling the administrative functions (e.g., COE forms, reports, scheduling) of the Central Office Engineer (COE).

Design Change Management System (DCMS)

The major advantages when using the DCMS are: complete detailed listing of all A, BU, B and D changes (by office, circuit, system and application status), the establishment of capital and expense (C and M) change budgets, the ability to order changes via individual or "bulk" order and change application tracking to completion.

Job Management Operations System (JMOS)

Job administration system that tracks an EWO from the time it is drawn, through construction, and until the job is closed out.

Modular Interactive Network Design (MIND)

A program that is utilized to design multipoint data communications networks of up to 1000 stations. Capable of assigning multiplexers, concentrators, etc. to optimze the cost of the system.

Microwave Radio Satellite Engineering and Licensing System (MRSELS)

Provides assistance in path engineering, RF interference protection on existing radio routes, frequency conditions and preparation of FCC applications.

Obstruction Fading Outage Prediction (OBSFAD)

This program calculates the outage time of microwave radio paths due to obstruction under varying conditions of refractivity.

Ohio Bell Telephone Central Office Engineering (OBTCOE)

An in–house system which summarizes and formats engineering data for step–by–step offices.

Pole Ordinal Location System (POLS)

Mechanized tabular record of all poles and any pole activity.

Segmented Special Service Design (SSSD)

Produces prototype design architecture for segmented special services circuits. Designs systems by feature for network channel nodes.

Universal Cable Circuit Analysis Program (UNICCAP)

Provides algorithms for calculating impedance, delay and loss characteristics of metallic cable facilities.

Assigned Pair Forecast System (APFS)

A mechanized process to produce forecasts of total assigned pairs by feeder route.

Forecasting and Analysis System for Marketing and Network (FASMAN)

Provides marketing intelligence to the local loop forecasting/planning process and profiles customers by products, industry, geography and network aggregation.

Forecasting Automated Workstation Network (FAWN)

Enables the local area forecaster and their managers to access, display and/or change forecast data from their workstations.

Historical Access Line System (HALS)

A database consisting of a history of access lines, including information about inward and outward movement, gain and in−service.

Interoffice Circuit Forecast Processor (ICFP)

A computer based forecasting system for interoffice facilities.

Mechanized Small Wire Center (MSWC)

Forecast process that produces wire center forecasts for small, stable wire centers.

Traffic Usage Forecasting System (TUFS)

Mechanized projections of trunk usage in CCS.

Inventory Management System (IMS)

A computerized inventory of available central office equipment. Information to IMS is uploaded from COEMS.

National Reuse Administration System (NARADS)

A centralized database of telephone company owned surplus materials available for intercompany reapplication within the Bell System.

Reuse Inventory Management System (RIMS)

This system manages inventory being removed and planned for reuse. Those Bell Operating Companies (BOC) subscribing to RIMS may elect to list their unrestricted surplus materials in NARADS via automatic data link. Other BOCs are required to submit a standard manually prepared form through the NARADS bureau.

KEYMASTER

Provides for a mechanized update of the information in the LATIS database. Used only in Wisconsin.

Loop Activity Data Information Tracking (LADIT)

Provides for a mechanized update of the information in the LATIS database.

Life−Cycle Cost Study System (LIFECOST)

Provides a method of evaluating cost factors associated with economic studies for product selection.

Loop Plant Improvement Evaluator 2 (LPIE2)

Provides an analysis of outside plant rehabilitation projects. Information is input manually.

Local Switching Replacement Planning System (LSRP)

A central office planning tool for the economic replacement of central office switches.

Metropolitan Area Transmission Facility Analysis Plan (MATFAP)

Used for fundamental planning of metropolitan networks. Provides economical comparisions in great detail.

Meta File (METAFILE)

Provides for a mechanized update of the LATIS database.

Mechanized Outside Plant Construction Program (MOSPCP)

Provides mechanized job pricing for budget purposes. Database contains unit costs and the user inputs the number of units proposed on the job.

Outstate Facilities Network Planning System (OFNPS)

Provides planning capabilities for out−of−state facilities.

Rehabilitation Budgeting (REBUD)

Estimates the maximum outside plant rehabilitation program which is economical or feasible. It also estimates the savings in operating costs and hours which would result from the estimated program.

Telephone Office Planning and Engineering System (TOPES)

An interactive graphics system used by equipment and building engineers in planning the layout of central offices and transmission stations.

Transmission Evaluation System (TREST)

Used by the Transmission Engineering Center (TEC) whose function is to support the network interoffice transmission measurement plan. This plan provides interoffice transmission characterization from the customer view of local and toll network connections. It also provides diagnostic tools for use in finding transmission problems on connections between Class 5 end−offices.

Bonus

End of Issue #3

Any Questions?

Editorial and Rants

Video which captured Islamic terrorists using an United Nation's ambulance to attack Israel. Where's the outrage? France? Germany? The rest of Euro–savage land? Iran? What a bunch of hypocritical, mass–murder sympathizing assholes.

The really sad thing is, if the IDF where to bomb that ambulance, the United Savages, err... I mean United Nations would vote to "condemn" Israel – without a second thought.

Reuters' Video of Islamic Terrorists using U.N. Ambluances

http://e.tln0.com/ame/archives/reuters_UN_amblulances_11_may_04.wmv