AT&T

MERLIN®Plus
COMMUNICATIONS SYSTEM

MERLIN Attendant
Installer's Guide

AT&T
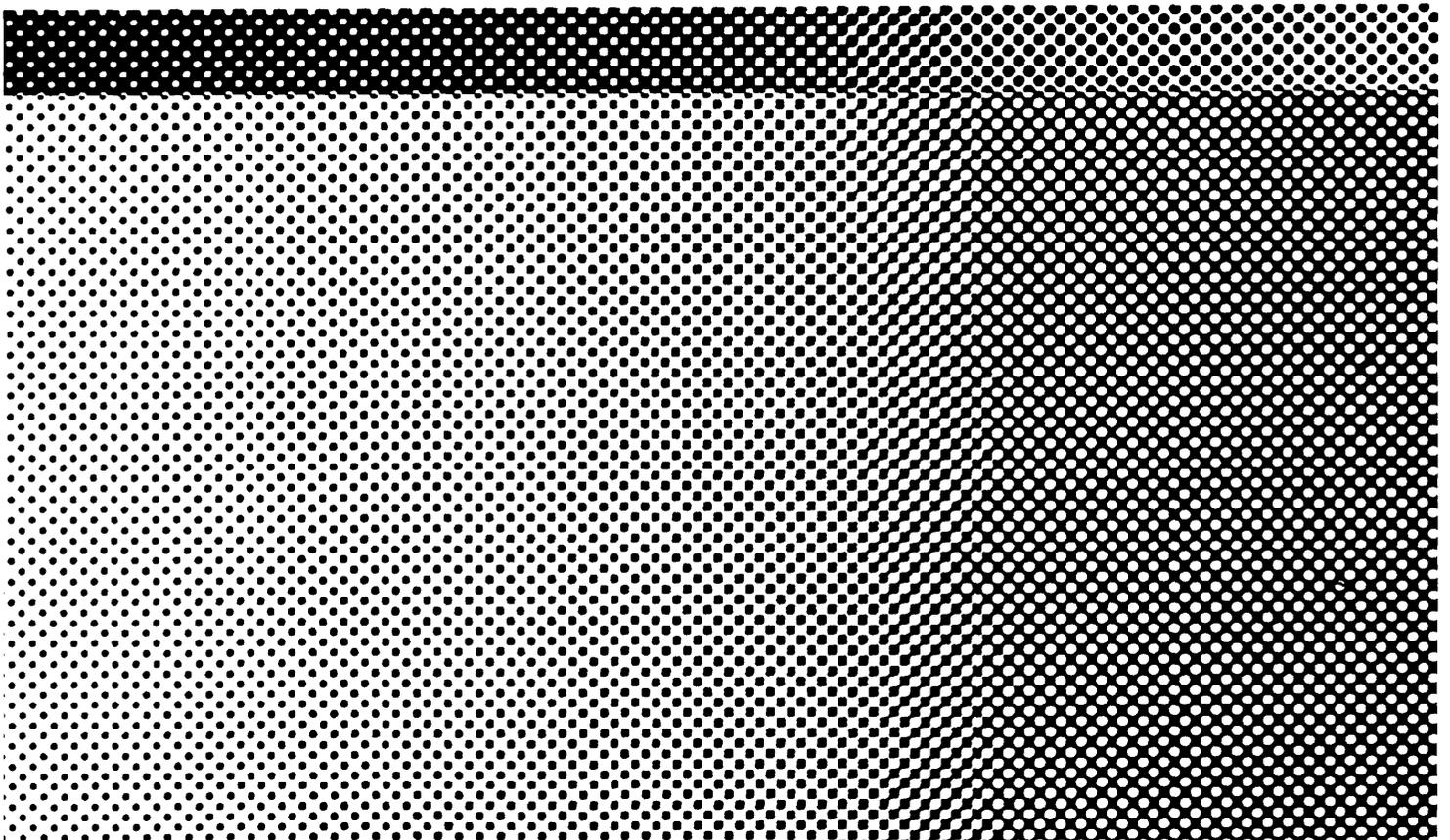
NOTICE

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NOTICE

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FCC Notification Information

INTERFERENCE INFORMATION

Federal Communications Commission (FCC) Rules require that you be notified of the following:

- This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause interference to radio communications.

- This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

- Operating this equipment in a residential area is likely to cause interference with radio communications, in which case the user, at his or her own expense, will be required to do whatever is necessary to correct the interference.

- The MERLIN Attendant is designed to be connected to the MERLIN Plus system control unit using a Basic Telephone and Modem Interface 2. The MERLIN Attendant is not intended to be connected directly to the network.

- The MERLIN Attendant is a separately registered device.

  > FCC registration number: GRM3U8-19187-CIE

Section 1: Installation Requirements

Overview

The MERLIN®Attendant answers incoming calls on designated lines with a prerecorded message and directs callers to the appropriate extension in the MERLIN Plus Communications System Release 1 or 2. This equipment `can:`

* reduce the workload of the receptionist

*   insure incoming calls are are answered during peak calling periods

* answer incoming calls after business hours and on holidays and weekends

> **CAUTION: The** MERLIN Attendant operates only with the MERLIN Plus Release 1 or Release 2 system and a Basic Telephone and Modem Interface (2301-BTI) connected to a MERLIN Plus system station module.

KEY FEATURES

Some of the key features of the MERLIN Attendant are:

* **Security Code**
  An authorized caller code that must be entered before changing any programmable features to protect recorded announcements and other programming from being changed by unauthorized personnel.

* **Remote Programmability**
  Features, including recorded announcements, can be programmed from a Touch-Tone phone either on-site or from a remote location.

* **Day/Night/Hold Announcements**
  Specific greetings can be played to callers in response to the time of day or the status of the call.

• **System Clock/Weekly Calendar**
An internal clock and calendar can track business
hours and days of operation to allow the appropriate
announcement to be played to callers.

• **Battery Backup**
Routing plans and programming changes can be saved
up to eight weeks following a power outage, provided
the battery is fully charged. Recorded announcements
can be saved up to three hours under the same
conditions.

FRONT PANEL
There are three lights on the front panel as shown in
Figure 1-1. The lights indicate the following:
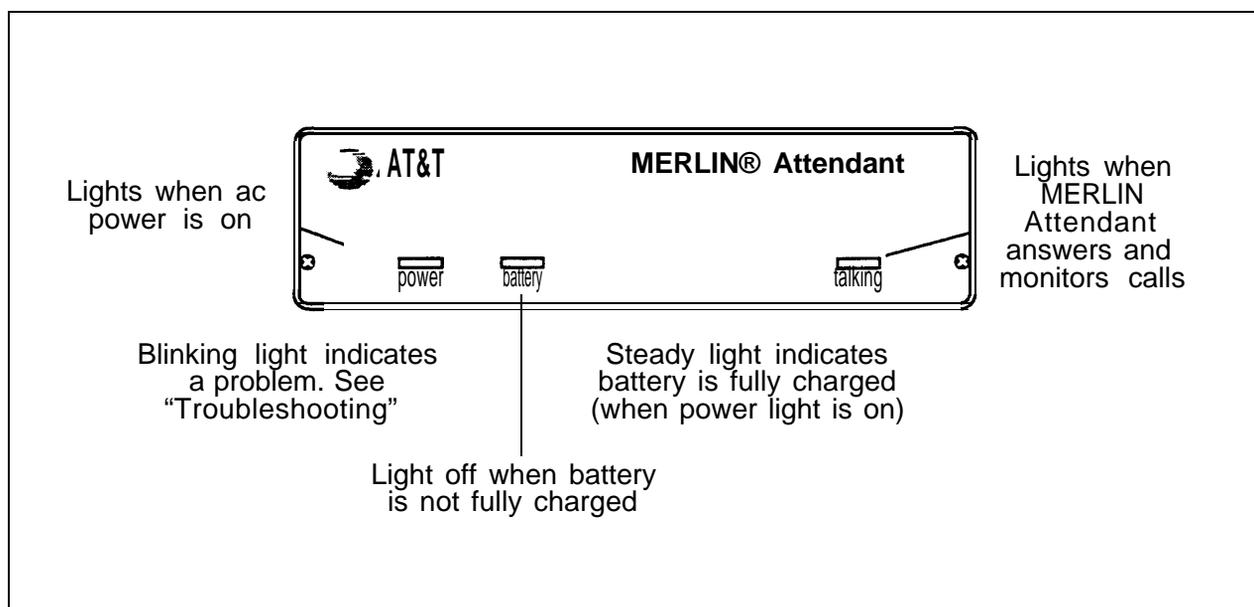
FIGURE 1-1 Front view of the MERLIN Attendant.

• **power**
MERLIN Attendant is connected to a power source
when this light is on.

• **battery**
Table 1-1 describes the meaning of the different light
combinations when ac power is connected:

TABLE 1-1 Meaning of Power and Battery Lights

Power Light	Battery Light	Description
On	Off	Battery charging
On	On	Battery fully charged
Off	On	Unit operating on battery power
Off	Off	Unit not operating; refer to "Troubleshooting"
On	Blinking	Out of Service code; refer to "Troubleshooting"

- **talking**

    This light is on whenever the MERLIN Attendant
    answers and monitors a call.

BACK PANEL   The connectors and four setup switches on the back panel
are shown in Figure 1-2.

FIGURE 1-2 Back view of the MERLIN Attendant.

- **reset**

  This recessed button resets the MERLIN Attendant.
  See "Troubleshooting" for details.

- **setup switches**

  There are four setup switches. Switches 1,2, and 3
  control the MERLIN Attendant response to a power
  outage as shown in Table 1-2; switch 4 is not used.
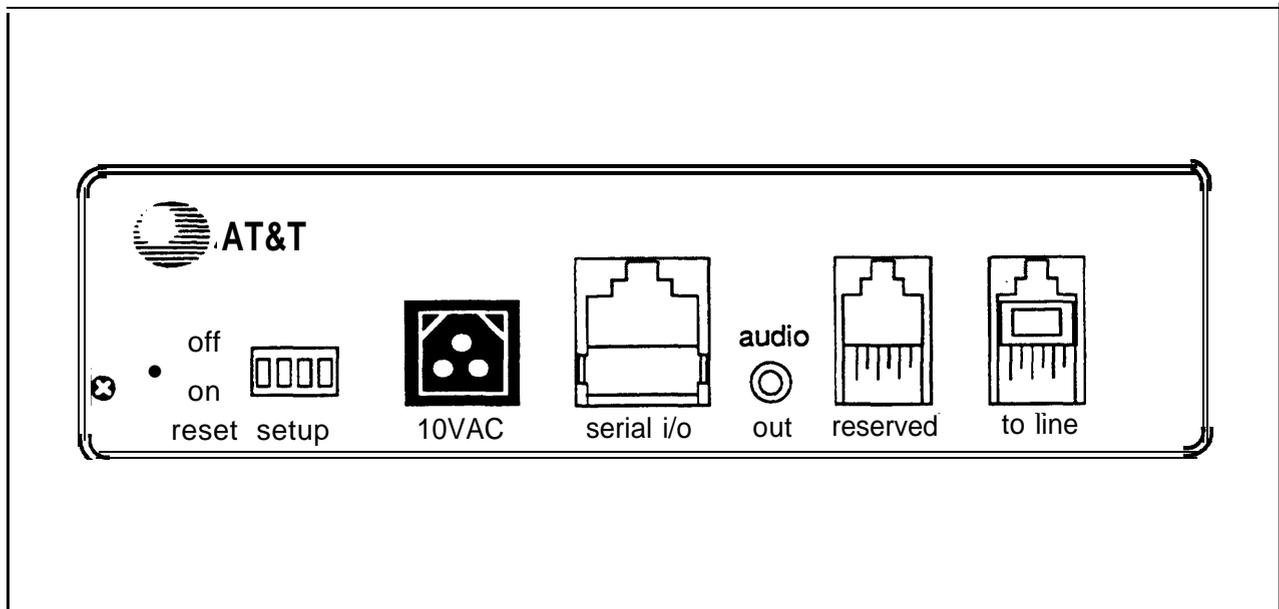
TABLE 1-2 Meaning of Setup Switch Settings

Switch	On (Down)	Off (up)
1	Recorded announcements are retained during a power outage	Recorded announcements are erased during a power outage
2	Routes and other programming parameters are retained during a power outage	Routes and other programming parameters are reset to defaults during a power outage
3	The MERLIN Attendant continues to answer calls during a power outage	The MERLIN Attendant does not answer calls during a power outage
4	Not Used	Not Used

CAUTION: After connecting ac power to the MERLIN
Attendant, be sure that switches 1 and 2 are ***on*** (down).
With this setting, recorded announcements are saved up
to three hours during a power outage (if the battery is
fully charged) and routing plans and programming
parameters are retained up to eight weeks.

---

10 VAC
This is the power connector.

- **serial i/o**
  This is the connection for the printer to perform diagnostic tests.

- **audio out**
  Not used

- **reserved**
  Not used

- **to line**
  This connects the MERLIN Attendant with the Basic Telephone and Modem Interface 2 (BTMI-2) that connects to a station module on the MERLIN Plus system control unit. Install the MERLIN Attendant on station intercom numbers as shown in Table 1-3.

TABLE 1-3 Intercom Numbers for MERLIN Attendant

MERLIN Attendant	Intercom Number
1st	11
2nd	12
3rd	13

Equipment and Location Requirements

The following equipment is supplied with the MERLIN Attendant:

- Power cord with transformer
- 8-foot, 6-wire modular phone cord
- Mounting plate
- User's Guide
- Basic Telephone and Modem Interface 2 (BTMI-2)

The BTMI-2 must be connected to a station module housed in the MERLIN Plus system control unit (Release 1 or 2). Up to three MERLIN Attendant units (connected to three BTMI-2s) can be connected to the module. The units must be connected, in order, to stations 11, 12, and 13.

NUMBER OF MERLIN Attendants REQUIRED

If a customer is using the MERLIN Attendant only for backup call handling or after hours, only one MERLIN. Attendant is required unless call traffic is heavy, as shown in Table 1-4. When call traffic is heavy, the number of MERLIN Attendants required at a site depends on the number of calls the customer receives during peak hours. Refer to Table 1-4 to determine how many MERLIN Attendants are required.

TABLE 1-4 Calls Per Hour Table

Calls Per Hour	Number of Units Needed
15	1
15-30	2
more than 30	3

If the customer does not know the number of calls the business gets during peak hours, you can estimate how many MERLIN Attendants are required by asking the

customer how many incoming lines the business has. Then refer to Table 1-5 to determine the number of MERLIN Attendants required.

TABLE 1-5 Incoming Lines Table

Number of Lines	Number of Units Needed
3 or fewer	1
4-6	2
6-8	3

The number of units needed can also be affected by the type of calls a customer receives. If there is significant overflow of unanswered calls to the receptionist an additional MERLIN Attendant may be needed.

LOCATION

The location for the MERLIN Attendant must meet the following criteria:

- Within 5 feet of a *properly grounded* ac power source that is *not* controlled by a switch

    NOTE: If possible, the MERLIN Attendant should share the same power source with the MERLIN Plus system control unit. This is recommended when the MERLIN Plus system control unit is connected to an Uninterruptible Power Supply (UPS).

- Not more than 10 feet away from the MERLIN Plus system control unit

- A sufficient distance away from a heating or cooling source to prevent exposure to temperatures beyond 32° F to 104° F (0°C to 40°C)

Administration Procedures

Before installing a MERLIN Attendant, you must install and administer a Basic Telephone and Modem Interface 2 (BTMI-2) for each unit you are connecting. Perform all the appropriate administration procedures from a multiline MERLIN system telephone that is connected to the MERLIN Plus system control unit.

IMMEDIATE CALL HANDLING

Use the following procedure to administer the MERLIN Attendant for immediate call handling in the MERLIN Plus system:

1   Program all common lines for "delayed ring" at the receptionist's voice terminal (station 10) and administer a Privacy button.

2   Program all common lines for "no ring" at all other stations.

3   Use the receptionist's voice terminal to program any personal lines for "no ring" at the MERLIN Attendant.

BACKUP CALL HANDLING

Use the following procedure to administer the MERLIN Attendant for backup call handling in the MERLIN Plus system:

1 Program a Privacy button for all stations with ringing lines.

2 Program all common lines for "no ring" at all other stations.

3 Program Day and/or Night Answer Delay as required on the MERLIN Attendant for a minimum of five ring cycles.

Connecting the MERLIN Attendant

> **CAUTION:** Before initial installation of the MERLIN Attendant, set switches 1 and 2 on the back panel to *off* (up).

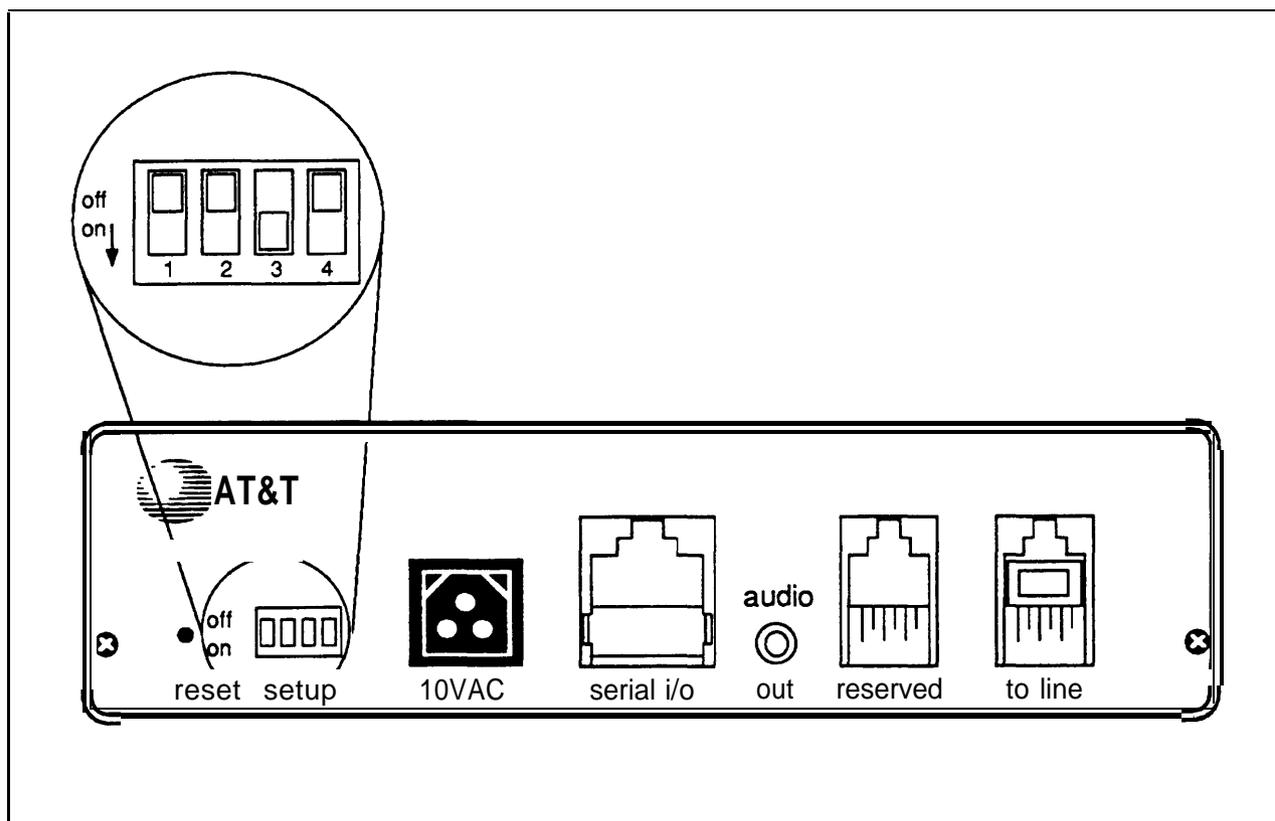Follow the steps below to install the MERLIN Attendant:

FIGURE 1-3 Setup Switch Positions for Installing Unit.

1 For each MERLIN Attendant port:

    a Install a Basic Telephone and Modem Interface 2 (BTMI-2) on the MERLIN Plus system control unit. Install BTMI-2s on station intercom numbers as shown in Table 1-6.

TABLE 1-6 Installing BTMI-2s on Station Intercom Numbers

Number of MERLIN Attendants	Intercom Number
1	11
2	11 and 12
3	11, 12, and 13

   b Switch the **BTMI-2 to** "data" mode.

2 Place the MERLIN Attendant on a table or desktop, or mount it using the mounting bracket:

   a Using a #10 or smaller screw (wood, sheet metal, concrete), attach the wall mounting bracket to a vertical wall surface so that the hook end of the bracket is down.

   b Locate the keyhole opening on the underside of the MERLIN Attendant with the hook on the bracket. Slide the unit over the hook and down to secure.

CAUTION: Do not stack multiple MERLIN Attendants; this *will damage* the units.

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3 Make sure setup switches 1 and 2 are *off,* then plug one end of the modular phone cord into the jack on the back of the MERLIN Attendant labeled "to line." (See Figure 1-3.)

4 Plug the other end of the modular phone cord into the BTMI-2. (See Figure 1-4.)

5 Plug one end of the power cord into the 10 VAC power connector on the MERLIN Attendant.

6   Plug the other end into a 120 VAC outlet.

The power light goes on. If the battery !ight flashes, routes have not been programmed.

7 Reset the setup switches as described in Table 1-7.

TABLE 1-7 Switch Settings When Operating Unit

Switch	Setting	Result
1	On	Saves recorded announcements during power outage
2	On	Saves routes and programmable features during power outage
3	Off	Does not use battery backup to answer calls during power outage (See NOTE)
4	Off	Not used

NOTE: During a power outage there is no need to use battery backup to answer calls if the MERLIN Attendant shares an Uninterruptible Power Supply (UPS) with the MERLIN Plus system control unit. If a UPS is not used with the control unit, incoming calls cannot be answered by the system during a power failure and therefore cannot be directed to the MERLIN Attendant.
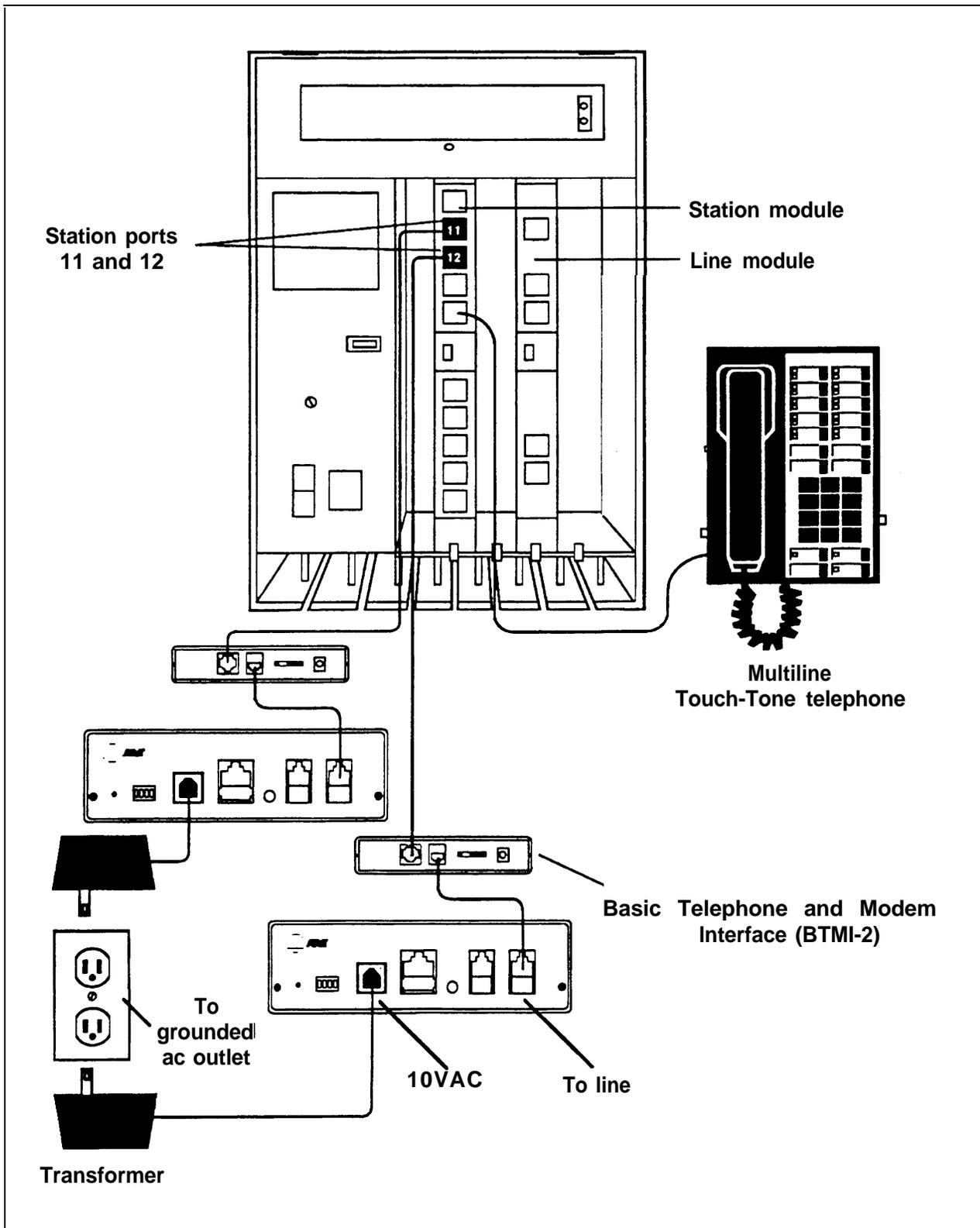
FIGURE 1-4 Connecting two MERLIN Attendants.

USING AN ANSWERING MACHINE

If the customer is using an answering machine to cover a station, the Transfer Return Interval for the MERLIN Attendant must be set to allow time for the answering machine to handle the call before it is returned to the MERLIN Attendant. Because ringing requirements vary for answering machines, a six-ring interval is recommended for use with the MERLIN Attendant.

Use of an answering machine with a MERLIN system telephone requires that a General Purpose Adapter be connected to the telephone. (See CIB 3063, "General Purpose Adapter," and the appropriate documents for the answering machine installation instructions.) After the installation, follow the procedure below:

1   At the attendant console, enter administration mode by sliding the T/P switch to "P" and pressing the Administer button.

2   Dial *2 and the number of rings to be permitted before a call is returned to the MERLIN Attendant. (Six rings is recommended.)
     The two-beep confirmation tone sounds.

3   Leave administration mode by sliding the T/Ps witch back to the center position.

4   At the answering machine user's telephone, program an Auto Answer-All button (*75).

5   If intercom calls are to be answered by the answering machine, also program Voice Announcement Disable (*39) at the user's telephone. (See the MERLIN Plus System Release 1 or Release 2 System Manual for more information on programming users' telephones.)

USING CALL FORWARDING OR REMOTE LINE ACCESS

If the customer is using the Call Forwarding or Remote Line Access features on the same lines assigned to the MERLIN Attendant, follow the procedure below:

NOTE: These features are available only with Release 2 of the MERLIN Plus system.

1 Follow the instructions in the *MERLIN Plus System Release 2 System Manual* to assign lines to Call Forwarding or Remote Line Access.

2 Set the Night Answer Delay option to five or more rings.

3 Program a telephone for Call Forwarding or Remote Line Access. If both CF and RLA are programmed and activated, CF takes precedence.

NOTE: Unless dedicated lines are available, these features should be used with the MERLIN Attendant only after business hours. Be sure to advise the customer to deactivate CF/RLA at the start of the business day.

Section 2: Initial Programming

Programming Features

The MERLIN Attendant is programmed from a Touch-Tone phone using special command strings that are discussed in this section. For each command string:

> * tells the MERLIN Attendant that the following digits are a part of a command string. It can also be used to start a command over when a mistake is made

> ## denotes the end of an entry or executes the command string

---

CAUTION: All on-site programming for the MERLIN Attendant must be done from a multi-line MERLIN phone that is connected to the MERLIN Plus system control unit. To program from a remote location, use a standard single-line Touch-Tone phone and enter one pound sign (#) for every two pound signs (##) that appear in a programming command.

COMPLETING THE PLANNING CONFIGURATOR FORM

Ask the customer for the completed MERLIN Attendant Planning Configurator Form. If this form has not been completed, assist the customer in completing it before proceeding.

ENTERING PROGRAMMING MODE

Perform the following steps before you begin programming:

1 Select an outside line and dial a telephone number that is answered by the MERLIN Attendant. Wait for the tone.
   Single beep sounds to indicate there are no announcements recorded.

2 Dial the default authorized caller code: *789##
   The two-beep confirmation tone sounds.

3 Dial *990046## (the MERLIN Plus system macro code) to initialize the system for MERLIN Plus system operation.

4 Continue programming the features in the following
order:

   a   Set the MERLIN Attendant Clock

   b   Set the Business Days

   c   Set the Business Hours

   d   Reallocate Announcement Times

   e   Record Announcements

   f   Play Back Announcements

   g   Program Routes

   h   Change Call Processing Options

SETTING THE CLOCK

The clock in the MERLIN Attendant must be
synchronized with the clock in the MERLIN Plus system
control unit to use the night announcement feature. If the
MERLIN Attendant clock is not set, the day
announcement plays at all times.

To set the MERLIN Attendant clock, use the following
procedure:

1 Dial *71 followed by:

   a One digit for the current day of the week

1	=	*Sunday*
2	=	*Monday*
3	=	*Tuesday*
4	=	*Wednesday*
5	=	*Thursday*
6	=	*Friday*
7	=	*Saturday*

b Two digits for the current month

01	=	*January*
02	=	*February*
03	=	*March*
04	=	*April*
05	=	*May*
06	=	*June*
07	=	*July*
08	=	*August*
09	=	*September*
10	=	*October*
11	=	*November*
12	=	*December*

c Two digits for the current date (01 - 31)

d Two digits for the current year (00 - 99)

e Two digits for the current hour (in military time)

00	=	*midnight*
23	=	*II:00p.m.*

f Two digits for the current minute (00 - 59)

g Two digits for the current second (00 - 59)

> **NOTE:** Step g is optional.

2   Dial ## to enter the command.
The two-beep confirmation tone sounds.

3   Continue programming or dial *## to exit authorized caller mode.

4 Dial ## again to disconnect.

**SETTING THE
BUSINESS DAYS**

Follow the procedure below to set the customer's business days (the default is open Monday through Friday).

1 Dial *74 followed by the code for the day of the week:

1	=	*Sunday*
2	=	*Monday*
3	=	*Tuesday*
4	=	*Wednesday*
5	=	*Thursday*
6	=	*Friday*
7	=	*Saturday*
9	=	*Entire week*

2 Dial one digit to indicate whether the business is open or closed for the day specified in step 1.

1	=	*open*
2	=	*closed*
3	=	*holiday*

The two-beep confirmation tone sounds.

3 Repeat steps 1 and 2 for each day of the week (unless the business is open the entire week).

4 Continue programming or dial *## to exit authorized caller mode.

5 Dial ## again to disconnect.

SETTING THE BUSINESS HOURS

Refer to the MERLIN Attendant Planning Configurator Form for the customer's business hours. The default setting is Monday to Friday, 8:30 a.m. to 5:00 p.m.

1 Dial *73 followed by:

   a One digit code for the day of the week:

1	=	*Sunday*
2	=	*Monday*
3	=	*Tuesday*
4	=	*Wednesday*
5	=	*Thursday*
6	=	*Friday*
7	=	*Saturday*
9	=	*Entire week*

   b Two digits for the opening hour (military time)

00	=	*midnight*
23	=	*11:00 p.m.*

   c Two digits for the opening minute (00 to 59)

   d Two digits for the closing hour (military time)

00	=	*midnight*
23	=	*11:00 p.m.*

   e Two digits for the closing minute (00 to 59)

   The two-beep confirmation tone sounds.

2 Repeat step 1 for each day (unless "entire week" is selected).

3 Continue programming or dial *## to exit authorized caller mode.

4 To disconnect, dial ##.

REALLOCATING ANNOUNCEMENT TIMES

Three announcements are available. Each has a duration in seconds, totaling 64 seconds. The customer can elect to lengthen or shorten any of the time allocations as long as the total equals 64 seconds. If a customer is not using an announcement, set the allocated time to 00. The allocations are as follows:

TABLE 2-1 Announcement Time Allocations

Seconds	Announcement
25	Day announcement
25	Night announcement
14	Hold announcement

NOTE: If the time allocated to one announcement is increased, decrease another time accordingly so that the total time equals 64 seconds. A hold announcement is required for proper system operation. (See "Recording Announcements.") Announcements are recorded only up to the time allocated. If while recording an announcement you run over the time allowed, the recording stops at the time allocated. Therefore, always play back the announcements to be sure they were completely recorded. See "Playing Back Announcements" in this section.

Follow the procedure below to reallocate announcement times:

> **CAUTION:** This procedure causes *all* announcements to be erased.

1 Dial *49 followed by the announcement time lengths for each announcement:

    NOTE: Set the time allocation to 00 for any announcement that is not being used.

    a Two digits for the maximum time (in seconds) allocated for the day announcement

    b Two digits for the maximum time (in seconds) allocated for the night announcement

    c Enter 00 for the maximum time for the transfer announcement. (This announcement is never used with the MERLIN Plus system.)

    d Two digits for the maximum time (in seconds) allocated for the hold announcement

2 Dial ## to enter the command.
The two-beep confirmation tone sounds.

3 Continue programming or dial *## to exit authorized caller mode.

4 Dial ## to disconnect.

RECORDING ANNOUNCEMENTS

The customer may elect to record these announcements in his or her own voice or the voice of another employee. When recording the announcement, the speaker should speak clearly, use a normal tone of voice, and pause after each route number so that when the message is played the caller has an opportunity to hear the number he or she needs to enter. If announcements are being transferred from a tape recorder, make sure the volume is not set too high.

Day Announcement

Here is an example of a day announcement:

"You have reached AT&T. (Pause) If you are calling from a rotary dial phone, please hold for assistance. If you are calling from a Touch-Tone phone and you know the extension of the person you are calling, please dial it now. (Pause) For Sales, dial 1. (Pause) For Parts, dial 2. (Pause) For Customer Service, dial 3. (Pause) Or stay on the line for operator assistance. "

Hold Announcement

Because unanswered calls are returned to the MERLIN Attendant, a hold announcement must be provided to tell callers what to do if a transfer fails. Here is a sample hold announcement:

"Please hold during silence while your call is being transferred. If you hear the greeting again, please dial zero for assistance."

Follow the steps below to record announcements:

1 Dial *4 followed by the one digit code for the announcement being recorded:

1	=	*Day announcement*
2	=	*Night announcement*
4	=	*Hold announcement*

NOTE: If the customer is using Call Forwarding or Remote Line Access on lines assigned to the MERLIN Attendant, the Attendant will answer calls when the CF or RLA lines are busy. Therefore, the night announcement should instruct callers to call back in a few minutes if the MERLIN Attendant answers. Here's a sample night announcement for this situation: *"You have reached ABC Motors. Our hours are 9:00 a.m. to 6:00 p.m. Monday through Friday. Please call back in a few minutes if you want to be transferred to our emergency service number. "*

2 Record the appropriate announcement. When you are finished, dial ## to enter the announcement.
   The two-beep confirmation tone sounds.

   NOTE: The delay between the time you dial ## to enter the command and the time you hear the confirmation tone represents the additional recording time available for the message.

3 Continue programming or dial *## to exit authorized caller mode.

4 Dial ## to disconnect.

PLAYING BACK ANNOUNCEMENTS

To confirm the recording of announcements, use the following procedure:

1 Dial *5 followed by the appropriate announcement code:

1	=	*Day announcement*
2	=	*Night announcement*
4	=	*Hold announcement*

You hear the announcement as it was recorded.

2 Continue programming or dial *## to exit authorized
   caller mode.

3 Dial ## to disconnect.

DETERMINING THE
ROUTING PLAN
The MERLIN Attendant is administered to transfer calls
using *blind transfer only.* The MERLIN Plus system
control unit handles the call after the MERLIN Attendant
transfers the caller to the route or extension number
dialed. If the number entered is invalid, the call is
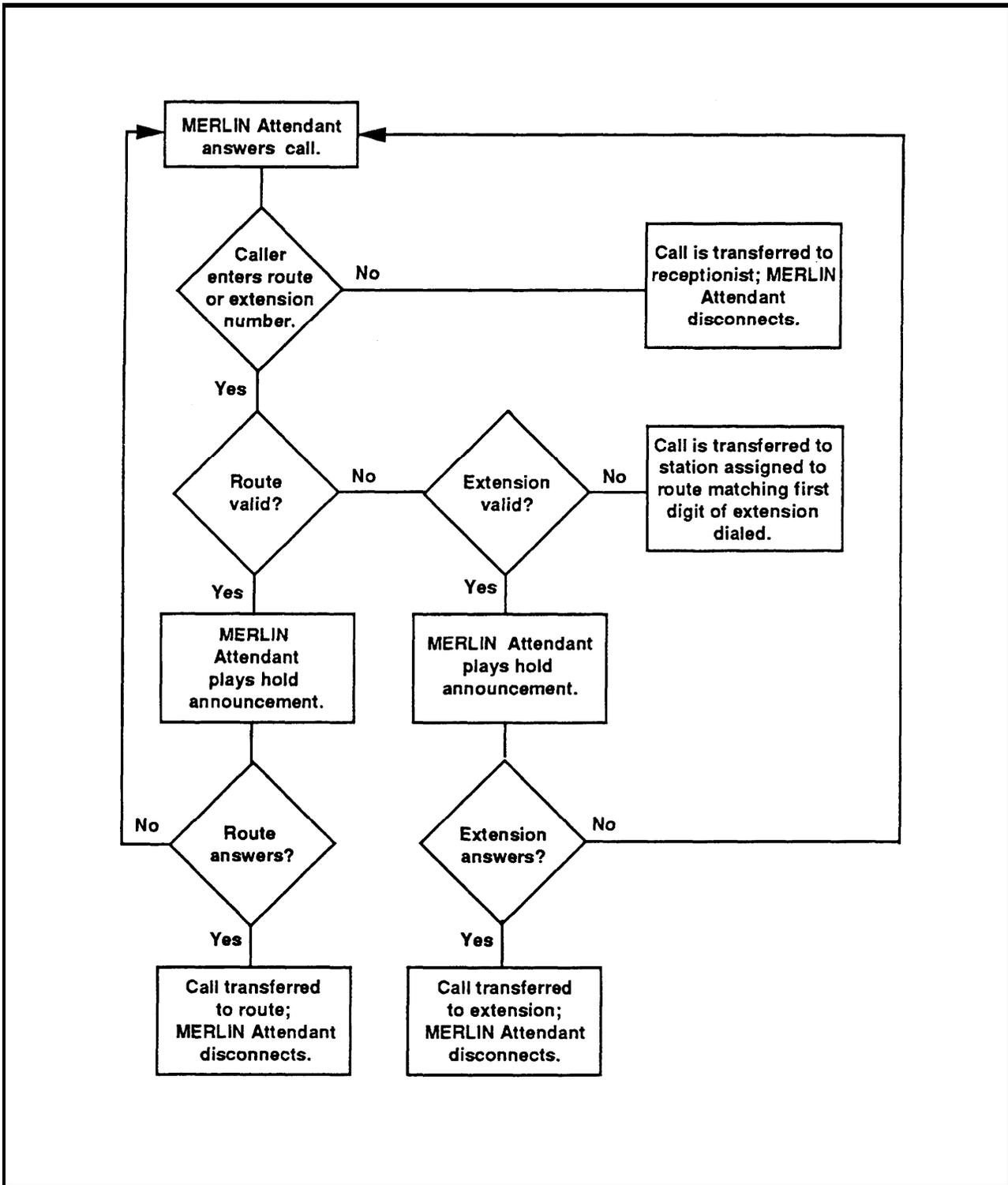transferred to the receptionist.

```
        ┌─────────────────┐
        │ MERLIN Attendant │◄──────────────────────────────────┐
     ┌─►│ answers call.    │◄──────────┐                        │
     │  └─────────────────┘            │                        │
     │           │                     │                        │
     │           ▼                     │                        │
     │        ╱──────╲                 │   ┌──────────────────┐ │
     │       ╱ Caller  ╲     No         │   │ Call is transferred to │
     │      ╱ enters route╲────────────────│ receptionist; MERLIN   │
     │      ╲ or extension ╱            │   │ Attendant              │
     │       ╲ number.   ╱              │   │ disconnects.           │
     │        ╲────────╱                │   └──────────────────┘
     │          │ Yes                   │
     │          ▼                       │
     │       ╱──────╲      No    ╱──────╲    No  ┌──────────────────┐
     │      ╱ Route   ╲─────────╱ Extension╲────│ Call is transferred to │
     │      ╲ valid?   ╱         ╲ valid?   ╱    │ station assigned to    │
     │       ╲────────╱           ╲────────╱     │ route matching first   │
     │          │ Yes                │ Yes       │ digit of extension     │
     │          ▼                    ▼           │ dialed.                │
     │    ┌──────────┐        ┌──────────┐       └──────────────────┘
     │    │ MERLIN    │        │ MERLIN    │
     │    │ Attendant │        │ Attendant │
     │    │ plays hold│        │ plays hold│
     │    │ announcement.│     │ announcement.│
     │    └──────────┘        └──────────┘
     │          │                    │
     │ No       ▼                    ▼           No
     └──────╱──────╲          ╱──────╲───────────────┐
           ╱ Route   ╲        ╱ Extension╲            │
           ╲ answers? ╱        ╲ answers? ╱           │
            ╲────────╱          ╲────────╱            │
               │ Yes               │ Yes
               ▼                   ▼
        ┌──────────┐        ┌──────────┐
        │ Call transferred│  │ Call transferred│
        │ to route;       │  │ to extension;   │
        │ MERLIN Attendant│  │ MERLIN Attendant│
        │ disconnects.    │  │ disconnects.    │
        └──────────┘        └──────────┘
```

FIGURE 2-1 Blind Transfer process.

**Programming Call
Handling Options**
The MERLIN Attendant can be configured to handle calls in two ways:

- **Immediate Call Handling**
  The MERLIN Attendant answers *all* the calls coming in on the specified lines. The receptionist handles callers who are calling from rotary phones or who require additional assistance.

- **Backup Call Handling**
  Incoming calls ring first at the receptionist position. Calls are answered by the MERLIN Attendant only when the receptionist fails to answer in a specified number of rings. The number of rings can be programmed. See "Call Processing Options" later in this section.
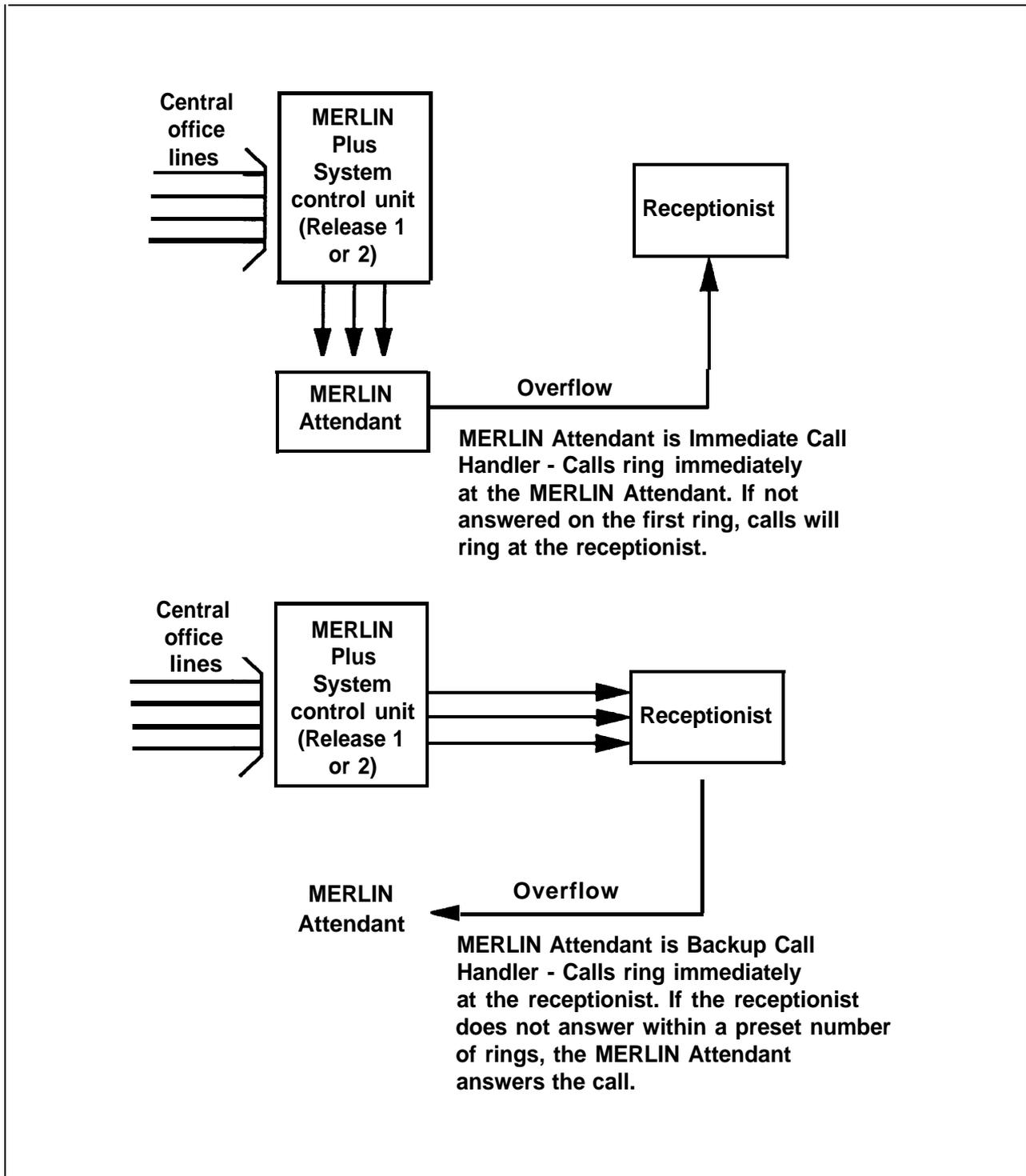
FIGURE 2-2 Immediate and Backup Call Handling.

Programming Routes   Follow these steps to enter new routes:

NOTE: If you make a mistake and want to reprogram a particular route, enter *3 followed by the route number (0 through 9) and then dial the pound sign (#) eight times. This erases all programmed extensions for the route entered.

1   Dial *8.

2   Dial the route number (0 through 9). This is the number callers enter when they want to be connected to a particular department.

> **NOTE:**   When programming route 0 for the receptionist, use extension 10.

3   Dial the appropriate extension code:

> 11   =   *Day Primary Extension*
> 21   =   *Night Primary Extension*

4   Dial 2 for a blind transfer.

5   Dial the extension number where the caller will be connected.

6   Dial ####.

7   Continue programming or dial *## to exit authorized caller mode.

8   Dial ## to disconnect.

CHANGING CALL PROCESSING OPTIONS

This section contains a list of ringing options and time delays that can be adjusted depending on the customer's needs. It also lists several options to improve call processing if the customer allows callers to dial individual extension numbers.

Table 2-2 gives a description of the options, the default setting for each one, and the possible settings that can be used. The last column can be used to record the value selected by the customer.

If the customer wants callers to have the option to enter individual extension numbers so that they can be connected to employees' telephones directly, these commands can improve the processing of those calls. Call transfers to extensions can be expedited when the MERLIN Attendant knows which extensions are valid in the MERLIN Plus system. For example, if the customer has extension numbers ranging from 14 to 21, once a caller enters two digits, the MERLIN Attendant quickly determines if it is a valid extension number, then transfers the call without further delay. Refer to the programming instructions following the table to change any of the values listed.

TABLE 2-2 Call Processing Options

Program Code	Option/ Description	Default Setting	Possible Settings	Current Setting
2901	**Day Answer Delay** In Day mode, number of rings before the MERLIN Attendant answers an incoming call. Set to 1 for immediate call handling. Set to 5 for backup call handling.	1	1−5	
2902	**Night Answer Delay** In Night mode, number of rings before the MERLIN Attendant answers an incoming call. Determines immediate or backup call handling. If not using Night mode, set to 15. To use with Call Forwarding or Remote Line Access, set to 5 or more.	1	1−15	
2903	**Dialing Delay** Number of seconds after an announcement that a caller has to dial a route or extension before the call is transferred to the receptionist.	2	2−5	
9709	**Lowest Extension** Identifies the lowest valid extension number in the range available in the system.		10 − 29	
9710	**Highest Extension** Identifies the highest valid extension number in the range available in the system.		10-29	

To change any of these Call Processing Options:

1 Select an outside line and dial a telephone number that is answered by the MERLIN Attendant.

   NOTE: If you are programming from a remote location using a single-line standard Touch-Tone phone, enter only one pound (#) sign for every two pound signs (##) that appear in a programing command.

2 Wait for an answer.

3 Dial * followed immediately by the authorized caller number and ##.
   The two-beep confirmation tone sounds.

4 Dial * followed by "Program Code" shown on Table 2-2.

   2901 = Day Answer Delay
   2902 = Night Answer Delay
   2903 = Dialing Delay
   9709 = Lowest Extension
   9710 = Highest Extension

5 Dial the number you have entered under "Current Setting".

6 Dial ##.
   The two-beep confirmation tone sounds.

   NOTE: For Codes 9709 (Lowest Extension) and 9710 (Highest Extension), dial the pound sign (#) four times to enter.

7 Continue programming or exit authorized caller mode by dialing *##.

8 To disconnect, dial ##.

Section 3: Testing and Troubleshooting

Testing

Once you have installed and programmed the MERLIN Attendant, you should dial the MERLIN Attendant from a multi-line Touch-Tone phone and perform the following tests:

TESTING ROUTES

Use this procedure to test the customer's routes:

1 Dial the first route number.

2 Use the customer's route plan to verify that the correct extension rings. *Do not pick up the call.*

3 Make sure the unanswered call is routed to the MERLIN Attendant.

4 Repeat this procedure for each of the routes.

TESTING EXTENSION NUMBERS

Use this procedure if the customer allows callers to enter individual extension numbers:

1 Dial a valid extension number. *Do not pick up the call.*

2 Make sure the call is directed to the proper extension.

3 Dial an invalid extension number.

4 Make sure the call is directed to the station whose first digit is part of the routing plan.

Troubleshooting

OUT-OF-SERVICE CODES

If the MERLIN Attendant detects a problem, the unit enters an out-of-service state. The LED labeled "battery" on the front panel blinks a specific number of times, pauses, then repeats the pattern. Refer to Table 3-1 for a list of the Out-of-Service codes.

NOTE: The MERLIN Attendant will not answer calls while it is out of service. The line will continue to ring until the caller hangs up.

If the "battery" light blinks once slowly then repeats the pattern, make sure all appropriate announcements are recorded. See "Playing Back Announcements" in Section 2, "Initial Programming."

If the problem persists or the "battery" light blinks more frequently, use a straightened paper clip to press the recessed **reset** button on the back panel of the MERLIN Attendant.

NOTE: Pressing **reset** does *not* affect the programming or recorded announcements.

If pressing **reset** does not correct the problem, the MERLIN Attendant should be replaced.

> **CAUTION:** If you must disconnect ac power to the MERLIN Attendant, make sure setup switches 1 and 2 on the back panel are *on* (down). This saves programming and recorded announcements.

TABLE 3-1 Out-of-service Codes

Number of Blinks	Problem
1	Announcements were not recorded or were erased (slow blink) or cannot compute battery level (fast blink).
2	Unable to turn Voice Recorder off.
3	Unable to turn Voice Recorder on.
4	Unable to turn Voice Playback off.
5	Unable to turn Voice Playback on.
6	Announcement detected with no time allocation.
7	Attempt made to play an unrecorded announcement.
8	RAM constants pool corruption detected.
9	ROM check-sum error detected.
10	Invalid value read from Real-Time Clock.

POWER FAILURES   During a power failure, the MERLIN Attendant can maintain all of its programming information (i.e., routes, business schedule, authorization code) up to eight weeks and all recorded announcements up to three hours *if* the MERLIN Attendant battery was fully charged and switches 1 and 2 were in the ON position at the time of the power failure.

It takes 18 hours of continuous power to charge the battery.

PRINTING REPORTS

You can connect a TI 700 or equivalent 1200-baud serial printer to the serial i/o port of the MERLIN Attendant to produce reports to analyze call traffic patterns or to see how routes, announcement times, or business schedules are programmed.

NOTE: A special adapter (printer cable) is required to connect a "silent 700" printer.

Setting the Baud Rate

The default baud rate for the serial i/o port is 9600. To connect a TI 700 or equivalent 1200-baud serial printer, set the baud rate to 1200 using the following procedure:

1   Select an outside line and dial a telephone number that is answered by the MERLIN Attendant.

    NOTE: If you are programming from a remote location using a single-line standard Touch-Tone phone, enter only one pound (#) sign for every two pound signs (##) that appear in a programming command.

2   Wait for an answer.

3   Dial * followed immediately by the authorized caller code and ##.
The two-beep confirmation tone sounds.

4   Dial *291712## to change the baud rate to 1200 baud.
The two-beep confirmation tone sounds.

5   Continue programming or exit authorized caller mode by dialing *##.

6   To disconnect, dial ##.

Contents of a Traffic Analysis Report

The traffic analysis report provides the following information:

- **Route**
  The report is detailed by route number (0 through 9).

- **Messages**
  This field is not relevant to the MERLIN Attendant.

- **Attempted**
  This field contains the number of times outside callers have selected a particular route since the last time the counter was reset to 0. See "Resetting the Counters'" for details.

- **Completed**
  This field records the number of times a call was completed to a particular route.

- **Abandoned before answer**
  This field indicates the number of calls abandoned before the MERLIN Attendant answered.

- **Abandoned after answer**
  The number of calls abandoned after the MERLIN Attendant answers a call but before the call is processed.

- **Authorized callers**
  The number of times authorized caller mode was accessed for programming.

NOTE: If any of the report counters exceed 65,535 total, the counter is reset to 0.

Connecting the Printer

To connect the printer, you need the following equipment

- 14-foot, 8-conductor modular cable (straight).

- Modular/RS-232 DB-25 adapter, male connector or Modular/RS-232 DB-25 adapter, female connector (depending on printer model).

The cable must be configured as shown in Table 3-2.

**TABLE 3-2 Pinout Assignment for the TI 700 Printer or
AT&T 475 Printer**

MERLIN Attendant	**Printer**
8 Conductor Modular Cable End Pins	RS-232 DB-25 Connector End Pins
Signal Ground—3	7—Signal Ground
Data Terminal Ready—8	6—Data Set Ready
Data Set Ready—4	2—Data Terminal Ready
Transmit Data—4	3—Receive Data
Receive Data—2	2—Transmit Data

USING AT&T 475 PRINTER

The dip switches in the AT&T 475 serial printer must be set as follows (O=Open, C=Closed):

- Switch 1: OCOOCCCO

- Switch 2: OOOOOOCO

- Switch 21: OOOCOOOC

- Switch 22: OOOO

- Switch 23: COOOCO

- Switch 24: OOOCOOOC

USING TI 700 PRINTER

There are two sets of switch settings to check on TI 700 printers. The four pencil switches under the paper compartment cover must be set as follows (On= Closed; Off = Open):

- Switch 1: OFF
- Switch 2: ON
- Switch 3: OFF
- Switch 4: ON

The three rocker switches at the upper right of the keyboard must be set as follows:

- UPPER CASE: OFF (Left side of the switch pressed down)
- ON LINE: ON (Right side of the switch pressed down)
- LOCAL COPY: OFF (Left side of the switch pressed down)

Printing Call Handling Reports

Once the cable is configured and the printer is connected, perform the following steps to print a report:

NOTE: If any of the report counters exceed 65,535 total, the counter is reset to 0.

1   Select an outside line and dial a telephone number that is answered by the MERLIN Attendant.

> **NOTE:** If you are programming from a remote location using a single-line standard Touch-Tone phone, enter only one pound (#) sign for every two pound signs (##) that appear in a programming command.

2 Wait for an answer.

3 Dial * followed immediately by the authorized caller code and ##.

4 Dial *2909 and the following appropriate choice:

> *1* = *print route programming*
> *2* = *print traffic analysis report*
> *3* **=** *print business schedule*
> *4* = *print announcement time allocations*

5 Once the report is complete, exit authorized caller
  mode by dialing *##.

6 To disconnect, dial ##.

**Resetting the
Counters**

To reset the call handling traffic statistics to 0, perform the
following steps:

1 Select an outside line and dial a telephone number that
  is answered by the MERLIN Attendant.

> **NOTE:** If you are programming from a remote
> location using a single-line standard Touch-
> Tone phone, enter only one pound (#) sign for
> every two pound signs (##) that appear in a
> programming command.

2 Wait for an answer.

3 Dial * followed immediately by the authorized caller
  code and ##.

4 Dial *29101.

5 Exit authorized caller mode by dialing *##.

6 To disconnect, dial ##.

Printing Call Processing Reports

To print the current settings of call processing options, perform the following steps:

1 Select an outside line and dial a telephone number that is answered by the MERLIN Attendant.

    NOTE: If you are programming from a remote location using a single-line standard Touch-Tone phone, enter only one pound (#) sign for every two pound signs (##) that appear in a programming command.

2 Wait for an answer.

3 Dial * followed immediately by the authorized caller code and ##.

4 Dial *29 followed by the appropriate selection:

> 01 = *Day Answer Delay*
> 02 = *Night Answer Delay*
> 03 = *Dialing Delay*

5 Dial ##.

6 Once the report is completed, exit authorized caller mode by dialing *##.

7 To disconnect, dial ##.

LOST AUTHORIZED CALLER CODE

If the default authorized caller code (789) is changed and the new code is lost or forgotten, the default code can be restored. However, this procedure also restores all the MERLIN Plus system default settings so that *any changed programmed setting must be reentered and all announcements must be rerecorded.*

To restore the default authorized caller code:

1 On the back of the MERLIN Attendant, set switches 1 and 2 to *off* (up).

2 Unplug the MERLIN Attendant from its power source.

3 With switches 1 and 2 still *off* (up), plug the MERLIN Attendant back into its power source.

4 Reset switches 1 and 2 to *on* (down).

5 Dial the default authorized caller code (789).

6 Dial *990046## (the MERLIN Plus macro code).

7 Use the MERLIN Attendant Planning Configurator Form to reprogram the settings and rerecord the announcements.

CALLERS DISCONNECTED AFTER GREETING

If incoming callers hear the MERLIN Attendant greeting and then are disconnected instead of being transferred, one or more greetings may not have been recorded. In this situation, the MERLIN Attendant sounds a warning beep that no message exists. This beep (generated by a Touch-Tone pound sign) causes the MERLIN Attendant to ignore any following Touch-Tone characters entered by the caller.

To verify that this is the case:

1 Select an outside line and call the MERLIN Attendant by dialing the main number of the business.

2 Listen to the greeting.

3 Dial a valid extension number in the MERLIN Plus system. If you hear a series of Touch-Tones as you dial, you have verified that a greeting is missing. (In normal operation, this process is silent.)

To correct this problem, refer to "Recording Announcements" in Section 2, "Programming Features," to verify that the appropriate announcements have been recorded.

RECEPTIONIST HEARS SILENCE OR DIAL TONE UPON ANSWERING

The MERLIN Attendant is preprogrammed to transfer to the receptionist any callers who do not enter a route or extension number. This means that abandoned calls, as well as calls from rotary phones and from Touch-Tone callers who do not enter a route or extension number, could ring on the receptionist's telephone. The use of answering machines can minimize this problem, except when callers disconnect during the MERLIN Attendant greeting announcement.

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