407-TYPE MULTIPLE DATA STATION USING 2B AUTOMATIC CALL DISTRIBUTOR DESCRIPTION

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1. GENERAL

1.01 This section provides information on the 407-type multiple data station using the 2B automatic call distributor (ACD). The 2B ACD is usually used with large 407-type data systems (24 to 48 data sets). The 407-type multiple data station is compatible with an Electronic Industries Association (EIA) voltage or contact equivalent customer interface. Figure 1 illustrates a typical system block diagram of the 407-type multiple data station using the 2B ACD.

1.02 This section is reissued to change "407A" to "407-type" data station. Since this constitutes a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The 407-type multiple data station is used primarily for Digital Inquiry Voice Answer-Back (DIVA) systems. These systems may be used in such applications as credit checking or retrieving information from a customer-provided computer. Using a Touch-Tone® or TRANSACTION* telephone set dial as the input device, a customer may call the computer and receive a voice answer over the telephone handset. This answer may consist of machine-generated or prerecorded phrases. These phrases are under the control of a customer-provided computer equipped with an audio response unit (Fig. 1).

> ***Note:*** The data set (DS) 407A-L1 will not work with early Transaction telephones, but may be factory modified to DS 407A-L1A, which will work with all Transaction telephones.

1.04 The 2B ACD is a small crossbar call distributing system for use on customer premises. The ACD provides automatic distribution of incoming data calls to data sets 407-type and associated computer ports. Incoming calls are distributed, approximately in the arrival order, to available data sets. A data connecting circuit and primary supervision position must be provided for system operation. The 2B ACD provides the following features when used with the 407-type multiple data station:

- Concentration of incoming calls
- Selection of an idle transfer trunk to a referral attendant, upon request from the data set
- Automatic identification of referral position to data set (optional)
- Ability to free the data set for other calls when referral attendant goes off-hook
- A maximum of 70 output positions (sum total of data sets and referral positions) and 68 incoming trunks (housed in four cabinets)
- Optional delayed announcement for calls held too long without being answered
- Queueing of incoming calls.

1.05 The 2B ACD is arranged so that the basic cabinet provides 10 output trunks and 20 incoming trunks. An output trunk consists of ***one*** of the following:

- Attendant trunk (data set)
- Ringdown transfer trunk

* Trademark of AT&TCo

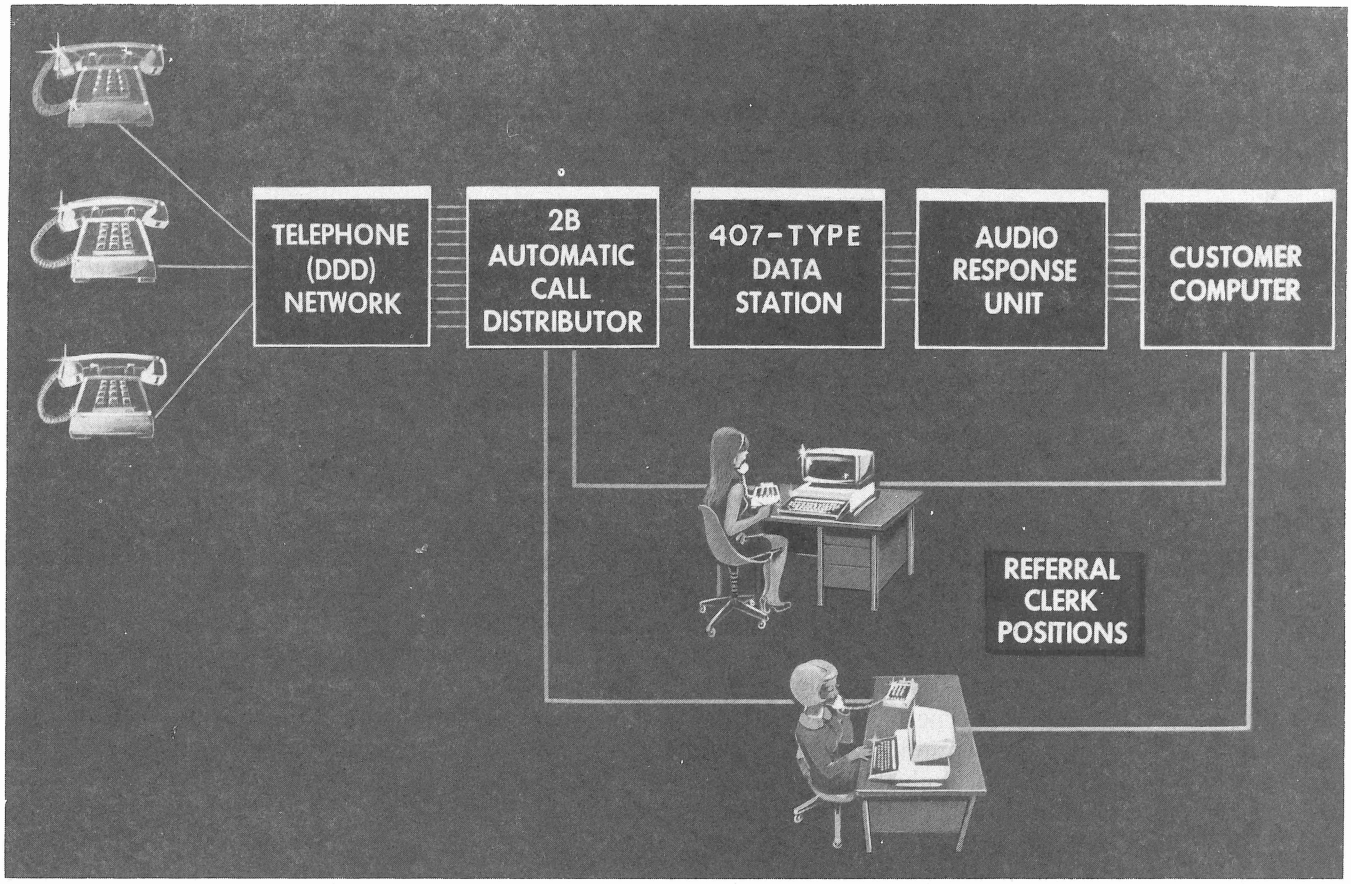

Fig. 1—System Block Diagram—407-Type Multiple Data Station Using 2B Automatic Call Distributor

- Announcement trunk, live announcement
- Load balancing and overflow trunk.

1.06 The 2B ACD transfer control and lockout circuit must be arranged to provide only one ringdown transfer group.

1.07 Since trunk identification will cause the Touch-Tone identification tones to be muted, trunk identification will ***not*** be provided in the 2B ACD data sytem. (Option M or N, as required, will be provided in the 2B ACD incoming trunk circuit.)

1.08 Many of the attendant features associated with the 2B ACD are ***not*** available in the 2B ACD data system (where the data connecting circuit or data sets replace the attendant positions). Features such as hold, conference, and outward service are ***not*** available in the 2B ACD data system.

1.09 All other 2B ACD options are selected in the standard way per Section 476-270-204 (see REFERENCES, Part 3).

1.10 To avoid repetition, there is no physical description in this section. For physical information of the 2B ACD or 407-type multiple data station, as separate apparatus, refer to the appropriate description BSP in Part 3 of this section.

2. FUNCTIONAL DESCRIPTION

2.01 The information provided in this part explains the functional process the 2B ACD and 407-type multiple data station follows upon receiving a call from a Touch-Tone telephone. For functional information on the 2B ACD or 407-type multiple

data station, as separate apparatus, refer to the appropriate BSP in Part 3 of this section. The following text is supported by the block diagram shown in Fig. 2.

2.02 When a call is placed to the customer-provided computer through the 2B ACD and data set 407-type, ringing is detected by the ACD. This allows the ACD to choose a computer port served by a data set that has data terminal ready (DTR) in the ON state. (DTR ON indicates the computer port is ready to accept a call.)

2.03 The call on the incoming trunk is connected to an attendant trunk through the link controller and gate circuit of the 2B ACD. The attendant trunk establishes a data path from the available data set 407-type to the incoming trunk providing the call facility. At this time the incoming trunk is under the control of the data connecting circuit via the attendant trunk and the calling customer. Data set 407-type then goes into the data mode and sends a 2025-Hz tone indicating that transmission of data from the incoming trunk is possible.

2.04 When other than routine calls are received (that cannot be completed by the audio response unit), the customer-provided computer places the attendant request (AR) lead in the ON state, and the data set signals the data connecting circuit that a transfer is required. Upon receiving the signal, the data connecting circuit signals the transfer control and lockout circuit to make the transfer. The transfer control and lockout circuit selects an idle ringdown transfer trunk. At this time the transfer control and lockout circuit establishes a three-way connection to the incoming trunk, attendant trunk, and the selected ringdown trunk. Control of the connection at this time remains with the attendant trunk. The calling terminal may also request attendant referral by sending the Touch-Tone sequence * *.

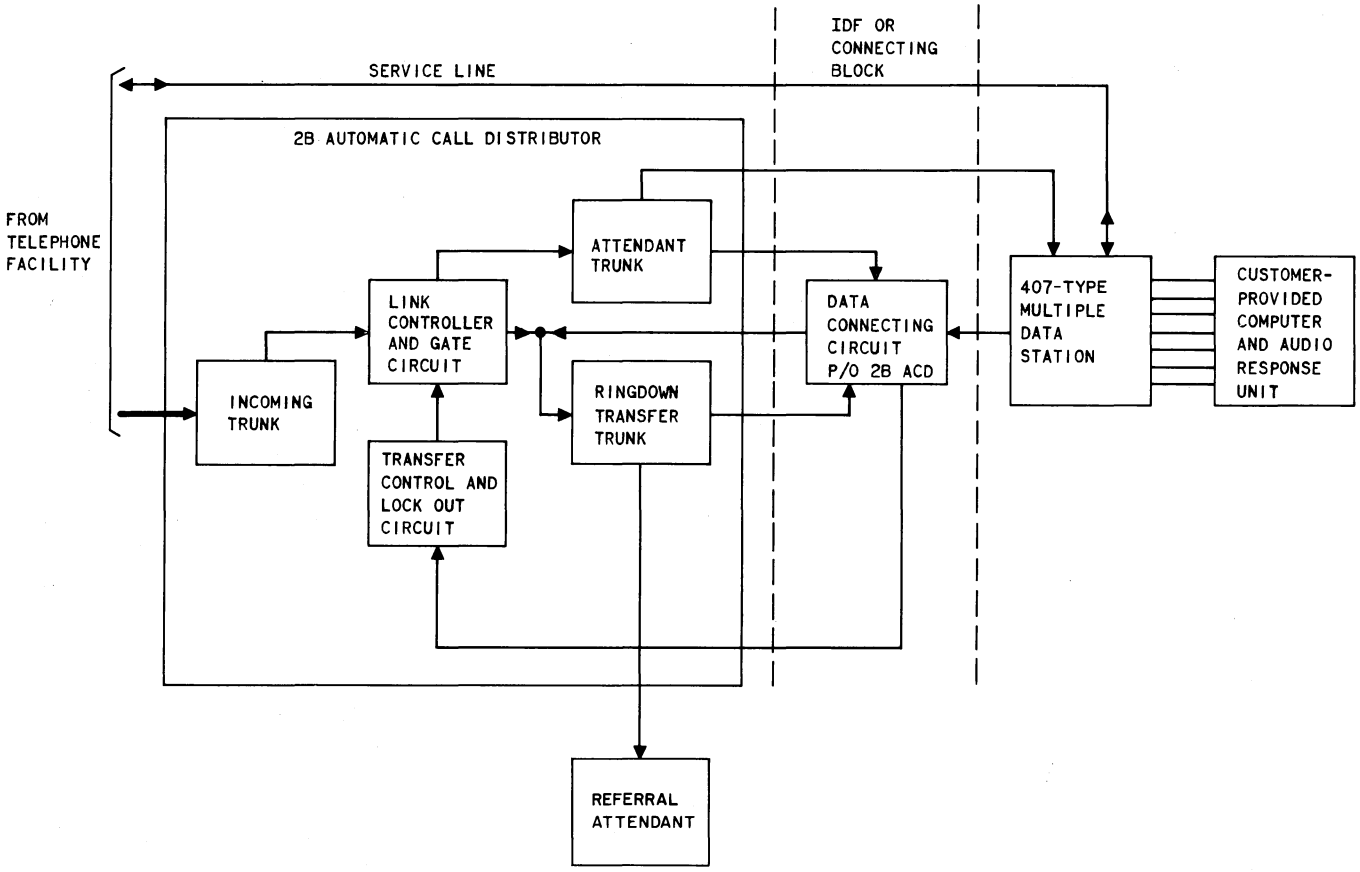

Fig. 2—Functional Block Diagram—407-Type Multiple Data Station Using 2B ACD

2.05 If the optional identification circuit is installed, the data connecting circuit generates and transmits two Touch-Tone digits back to the computer through data set 407-type. These digits specify which referral position has been selected. The selected ringdown transfer trunk also sends a 20-Hz ringing signal to the associated referral attendant telephone equipment.

2.06 When the referral attendant answers, a talking path is established between the incoming trunk and the ringdown transfer trunk through the link controller and gate circuit.

2.07 The referral attendant, after going off-hook, can signal the computer either to remain on-line (DTR ON) or to place DTR in the OFF condition removing the computer from the line. This will occur automatically with DS 407B stations during "computer down." If the computer and data set remain on the line, the data set can receive data while the referral attendant conducts business. After the referral attendant hangs up, the data set can still receive data. If the referral attendant signals the computer to turn DTR OFF, the data set will drop the line. At this time, the attendant trunk and data set are available to handle another incoming call. The referral attendant then can complete the call.

2.08 If the AR lead is dropped before the referral attendant answers the call, the referral trunk will release. When the AR lead is ***not*** dropped after the referral attendant answers the call, the tip and ring are bridged with a 900-ohm resistor. The AR lead ***must*** be dropped when the DTR lead is dropped or the data set will ***not*** be released and the next call will connect directly to that data set.

2.09 A call is terminated when the calling customer hangs up or transmits an end-of-message code and the computer turns DTR OFF. If the data set is off-line, the referral attendant may also terminate the call by hanging up. When the call is terminated, the connection between the ringdown transfer trunk and the incoming trunk is broken.

2.10 A service line is provided with the 407-type multiple data station. This service line bypasses the 2B ACD and enables remote testing of any data set 407-type mounted in the associated cabinet.

3. REFERENCES

3.01 The following documents pertain to the 407-type multiple data station when using a 2B ACD.

SD & CD 1D240-01 Data System Station—Data Set 407-Type

SD & CD 1D241-01 Power Unit 101A

SECTION	TITLE
476-270-203	2B Automatic Call Distributing System Cabling and Cross Connects
476-270-204	2B Automatic Call Distributing Service Options—Method of Providing
590-004-109	407-Type Multiple Data Station—Reference Guide
590-100-132	46A1 Data Unit—Identification
590-100-133	47A1 Data Unit—Identification
590-102-132	41-Type Data Mounting—Identification
594-030-100	Data Set 407-Type—Identification
594-800-100	407-Type Multiple Data Station—Description
594-800-150	407-Type Multiple Data Station—Supplementary Information
594-800-200	407-Type Multiple Data Station—Installation and Connections
594-800-300	407-Type Multiple Data Station—Maintenance
594-800-500	407-Type Multiple Data Station—Test

SECTION	TITLE
594-800-501	407-Type Multiple Data Station Using 2B Automatic Call Distributor—System Test
668-104-540	Data Test Center 904A- and 904C-Types—407-Type Multiple Data Station—Loop-Back Test
981-235-101	2B Automatic Call Distributing System—General Description Information