

33 AND 35 TELETYPEWRITER STATIONS  
FOR "DATA LINE CONCENTRATOR" SERVICE  
DESCRIPTION AND OPERATION

CONTENTS	PAGE
1. GENERAL . . . . .	1
2. DESCRIPTION AND OPERATION . . . . .	1
STATION CONFIGURATIONS . . . . .	1
A. One Cluster of Stations, One Local Computer . . . . .	4
B. One Cluster of Stations, One Remote Computer . . . . .	6
C. One Cluster, More Than One Computer . . . . .	7
D. Multiple Clusters, One Computer . . . . .	8
E. Multiple Clusters, More Than One Computer . . . . .	14
F. Eight or Fewer Stations Remote From One Destination . . . . .	17
3. REFERENCES . . . . .	20

1. GENERAL

1.01 This section provides a general description and operation of 33 and 35 teletypewriter stations for Data Line Concentrator Service, hereafter referred to as DLCS.

1.02 The 33 and 35 stations used in this service are keyboard send-receive (KSR) and automatic send-receive (ASR) stations, friction or sprocket feed. Receive-only stations are not used.

1.03 DLCS can provide for the connection of a maximum of 128 variously configured stations to a smaller number of computer ports. Speed of transmission is at 100 wpm (110 baud). DLCS is an originate only service, from the station to the computer. No transmission between stations is possible except in DLCS/DATA-PHONE<sup>®</sup> interconnection arrangements where a DLCS station can access a DATA-PHONE station.

1.04 The 33 ASR Station is shown in Figure 1. The keyboard arrangement for the 33 station is shown in Figure 2. The 35 ASR Station is shown in Figure 3. The keyboard arrangement for the 35 station is shown in Figure 4. References to left, right, up, down, front, rear, etc consider the teletypewriter station as viewed by the station operator.

2. DESCRIPTION AND OPERATION

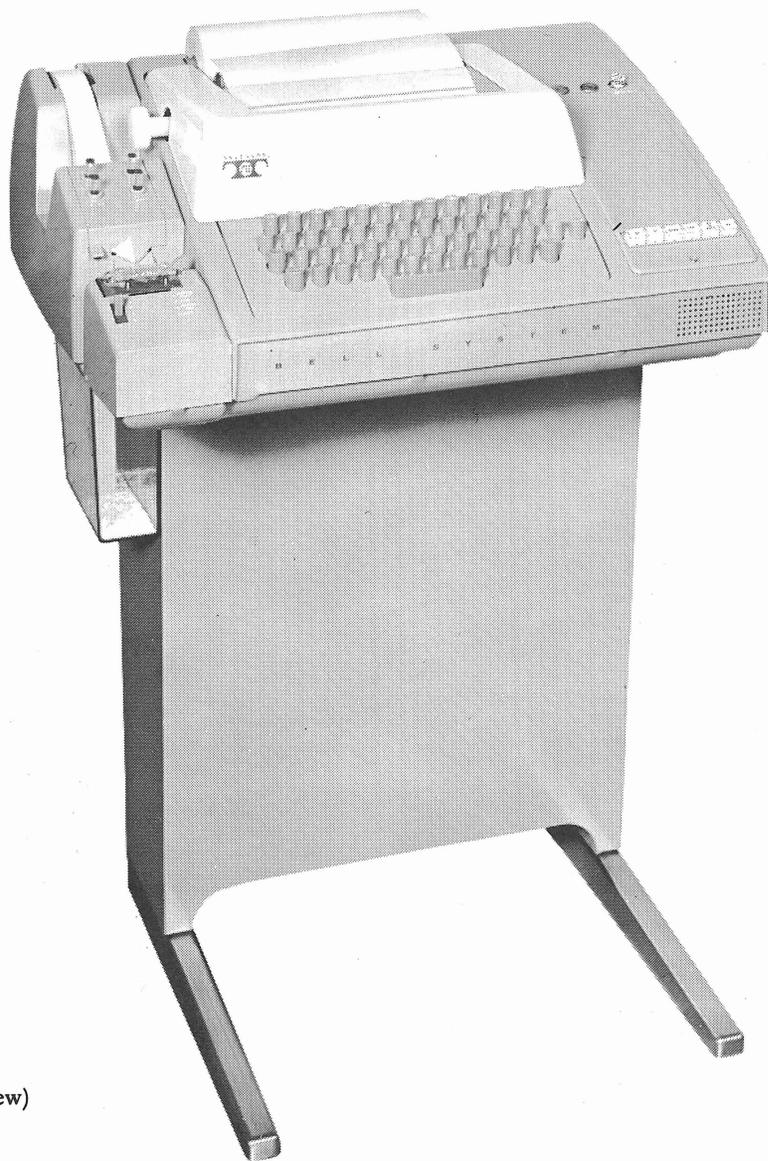
2.01 33 and 35 stations for DLCS consist of ASR and KSR teletypewriters, friction or sprocket feed, equipped with one of a variety of data sets. The particular data set used depends upon the way the teletypewriter station is configured.

STATION CONFIGURATIONS

2.02 DLCS permits a station to access a computer port in a number of ways, of which the following six may be considered basic configurations:

- A. One cluster of teletypewriter stations, one local computer.
- B. One cluster of teletypewriter stations, one remote computer.
- C. One cluster of teletypewriter stations, more than one computer.
- D. Multiple clusters of teletypewriter stations, one computer.
- E. Multiple clusters of teletypewriter stations, more than one computer.
- F. Eight (or less) teletypewriter stations, one computer (or one concentrator).

2.03 Each of these service arrangements requires specific data sets at the teletypewriter location, at the concentrator, and at the computer port. This practice covers



(Left Front View)

Figure 1 - 33 ASR Station

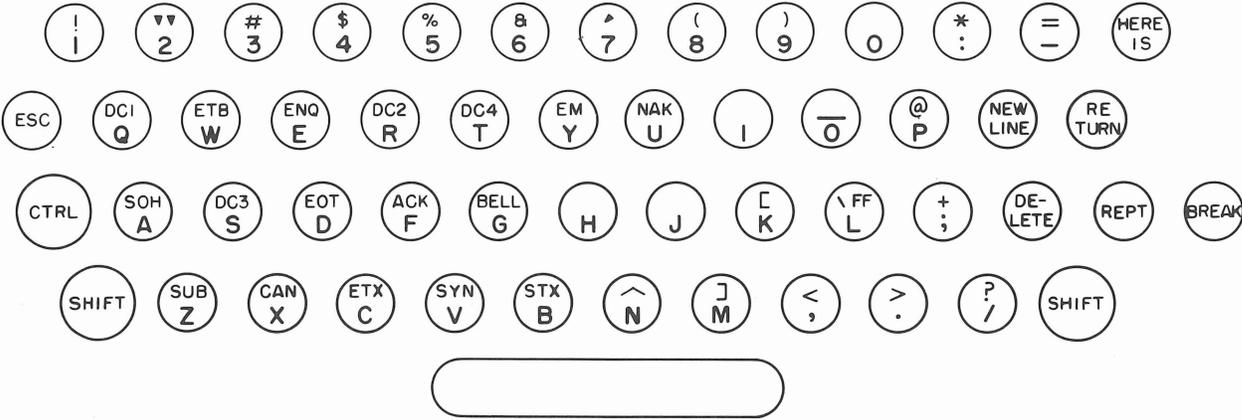
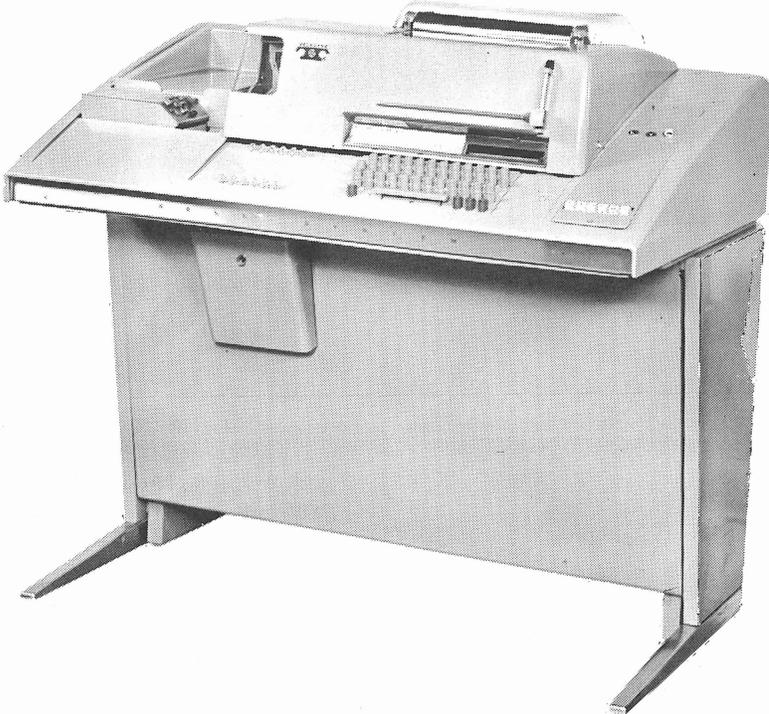


Figure 2 - 33 Station Keyboard Arrangement



(Right Front View)

Figure 3 - 35 ASR Station

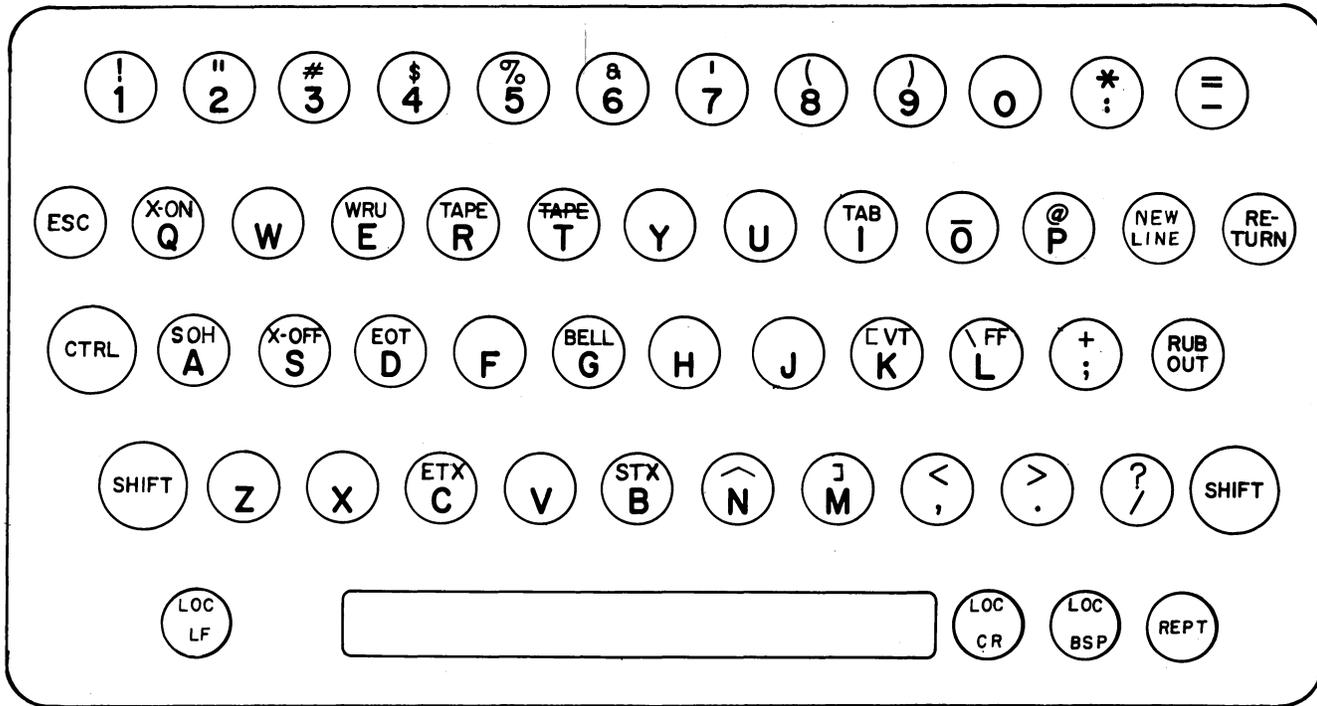


Figure 4 - 35 Station Keyboard Arrangement

only the data sets associated with the teletypewriters. For the DLCS system description, refer to Section 591-810-100.

A. One Cluster of Stations, One Local Computer

2.04 Figure 5 is a simplified drawing showing eight stations in the cluster connected to a computer via a 10A concentrator. The stations are designated as local stations. The concentrator may be located at the cluster or at the computer location. Some stations may be outside the cluster. These remote stations connect with the computer via the same concentrator serving the local stations using private line voice or private line telegraph facilities. The maximum number of stations that can be served by the concentrator is 128.

2.05 The local station is a teletypewriter set equipped with data set 109C-type for half-duplex operation, or with data set 109F-type for half- or full-duplex operation at 110 bauds. Both data set 109C-type and 109F-type mount under the teletypewriter cover in front of the call control unit, to the right of the set. These data sets provide the operator controls for the station. Their key designations are:

Data Set						
109C-Type	OFF	LINE 1	LINE 2	LOCAL	SPARE	SPARE

Data Set						
109F-Type	OFF	LINE 1	LINE 2	LOCAL	SPARE	TEST

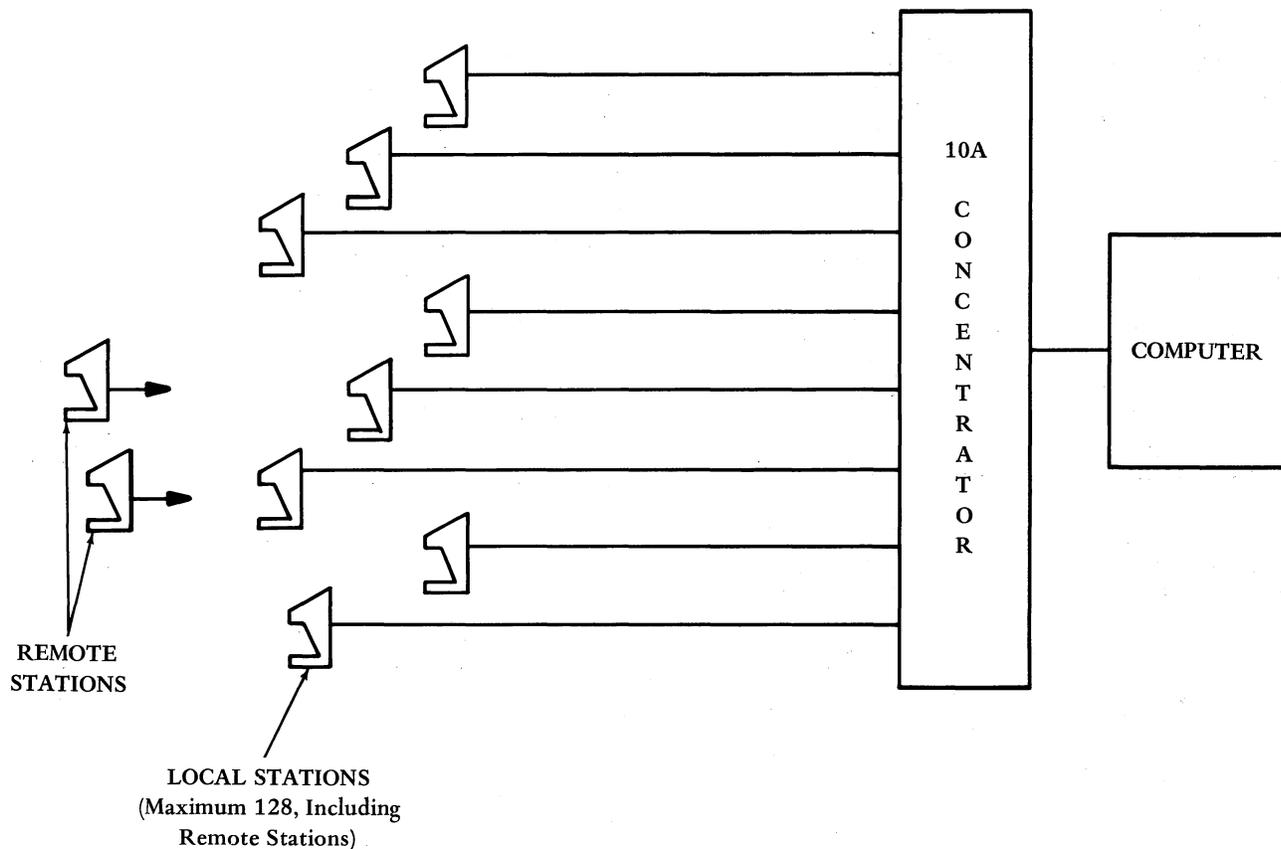


Figure 5 - One Cluster, One Local Computer

#### Station Interface

2.06 The 109C-type data set connects directly with the call control unit of the teletypewriter by means of the following leads:

Protective Ground – connects the data set bracket to the teletypewriter set frame.

Signal Ground – common reference for the data set and the power supply voltages.

Teletypewriter Ready – positive 24 v dc supplied by the teletypewriter.

Send Data – a pair of leads connected to floating send contacts in the teletypewriter.

Incoming Data – data signals from the data set are applied over a pair of leads to the selector magnet driver.

Send Break – a pair of leads connect to floating break contacts in the teletypewriter.

Data Set Ready – a signal applied to this lead by the data set is a request to the teletypewriter to start its motor.

2.07 The 109F-type data set connects with the teletypewriter by means of the same leads as data set 109C-type.

#### Station Controls Operation

2.08 Key operation for both data sets 109C-type and 109F-type is as follows:

**OFF** – A locking key which, when depressed disconnects the data set from the line; the teletypewriter motor is turned off. If the station is equipped with the EOT (end of transmission) option, reception of EOT stops the teletypewriter motor and lights the OFF key.

**LINE 1** – A locking key whose lamp lights when the key is depressed. Depression of this key connects the data set to the line and starts the teletypewriter motor.

LINE 2 – A locking key whose lamp lights when the key is depressed. Depression of this key connects the data set to the line with tip and ring connections reversed. The teletypewriter motor turns on.

Note: This key is operable in dual access operation (see 2.20 thru 2.25). In single access operation this key is blocked.

LOCAL – A locking key whose lamp lights when depressed. Depression of this key disconnects the data set from the line and terminates it in a dummy line circuit to derive local copy. The teletypewriter motor turns on.

SPARE – Not connected.

TEST – A locking key whose lamp lights when depressed. This key, when depressed in conjunction with LINE 1 or LINE 2 key connects the receive lead to the send lead for loop around testing and at the same time disables the send contacts. A copy of received data is sent to the SMD (selective magnet driver) in the teletypewriter.

#### Station Options

2.09 EOT Disconnect – The ET1 circuit pack, when added to data set 109C-type or 109F-type, provides two options, EOT disconnect and send space timer (SST). The SST option is discussed in 2.10. When the teletypewriter station receives the end of transmission code (EOT) the OFF key lights, the LINE 1 (LINE 2 in dual access) key remains lighted, the metallic loop is opened, and the teletypewriter motor turns off. In order to request service again the operator must first depress the OFF key, thereby extinguishing the lamp.

2.10 Send Space Timer (SST) – Prevents the data set from transmitting a space longer than that required for normal data communication. When the BREAK key of either the 33 or the 35 teletypewriter is depressed, a timing circuit in the ET1 circuit pack limits the break to 1/2 second.

#### Local Station Operation

2.11 The attendant of a local station within the cluster operates the LINE 1 key. This is interpreted by the concentrator as a request for service. If a port at the computer is available the concentrator connects the station to the appropriate trunk.

2.12 At the teletypewriter station the attendant has no indication that connection to the computer has been made. The operator must be alerted by the computer that the connection is made.

2.13 If no ports are available at the computer the station is camped on. The concentrator sends a signal that appears to the station as a DELETE character. In responding to this signal the station positioning mechanisms create an audible click which is the indication to the attendant that the station is camped on and will be served according to its order rank in the queue.

2.14 Station disconnect can be accomplished by the station attendant operating the OFF key. If the station is equipped with the EOT disconnect option, station disconnect will follow receipt of the EOT code from the computer, or from the station itself generating the EOT code. If the data terminal ready lead option is installed in the computer port interface, the communication port may cause the connection to be released. If the connection is released, the station is put in a state where it is no longer connected to the computer, but not off. The trunk is available to other stations. The station is put in a holding state connected to the concentrator with the teletypewriter motor running. In order to put the station in an off state, the OFF key at the station must be pressed. The OFF key must be pressed before a new request for service can be initiated.

2.15 Remote stations outside the local cluster are described in 2.27 thru 2.40. These remote stations access the local concentrator using private line voice or private line telegraph facilities. These remote stations are therefore not equipped with data sets 109C-type or 109F-type.

#### B. One Cluster of Stations, One Remote Computer

2.16 Figure 6 is a simplified drawing showing eight local stations connected to the local 10A concentrator and two remote stations outside the local cluster.

2.17 The local stations are equipped with data set 109C-type or 109F-type. These stations properly terminate at the 1A data station at the concentrator site. The 1A data station multiplexes up to eight 150 baud channels over a voice-grade facility. At the computer site another 1A data station connects the individual channels to the computer port. The 1A data station will be further discussed in 2.47 thru 2.55.

2.18 The remote stations are located outside the local cluster, and access the local concentrator using private line voice or private line telegraph facilities. At the

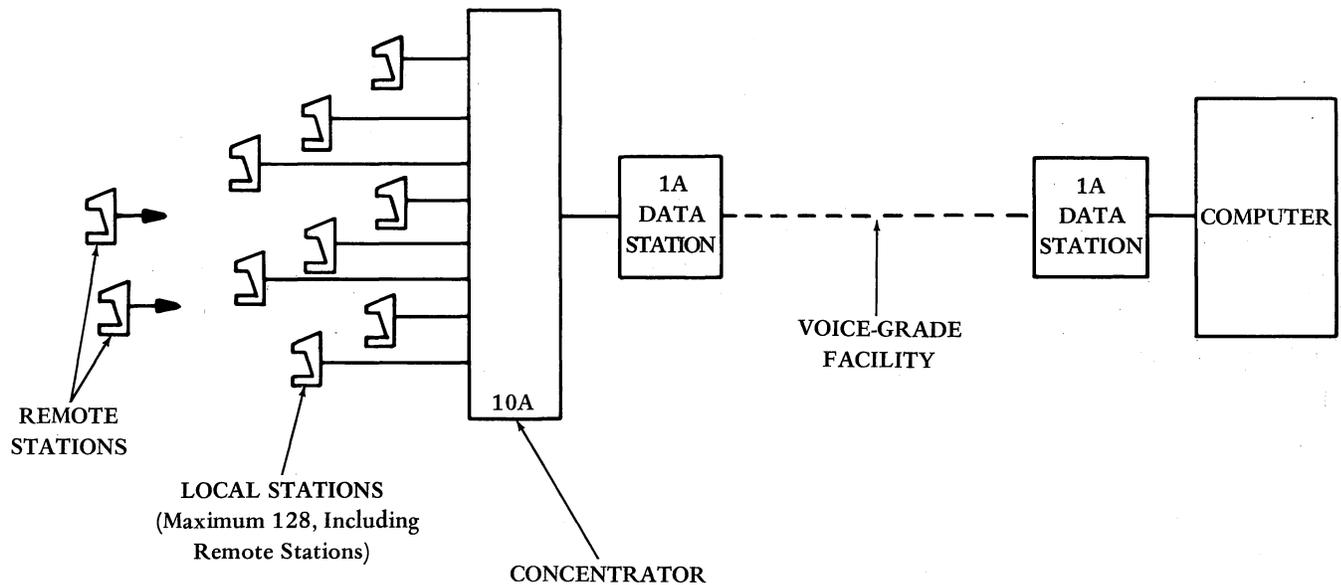


Figure 6 - One Cluster of Stations, One Remote Computer

concentrator the remote stations are connected to the 1A data station and multiplexed in the same fashion as the local stations.

2.19 The stations in this configuration are similar to the local stations of configuration A. The only difference results from the computer being located at a site whose distance exceeds the resistance limits of data sets 109C-type and 109F-type. The interface options, and the operation, therefore, of the stations in this configuration are as described in 2.04 thru 2.15 for the local stations in configuration A.

#### C. One Cluster, More Than One Computer

2.20 Figure 7 is a simplified drawing showing eight local stations accessing a 10B-type concentrator which provides two trunk groups (A and B) each having access to one computer. Two stations are shown outside the local cluster and are designated as remote stations.

2.21 The local stations in this configuration are similar to the local stations in configurations A and B except they have access to two trunk groups. The LINE 2 key of data set 109C-type or 109F-type, therefore, is unblocked.

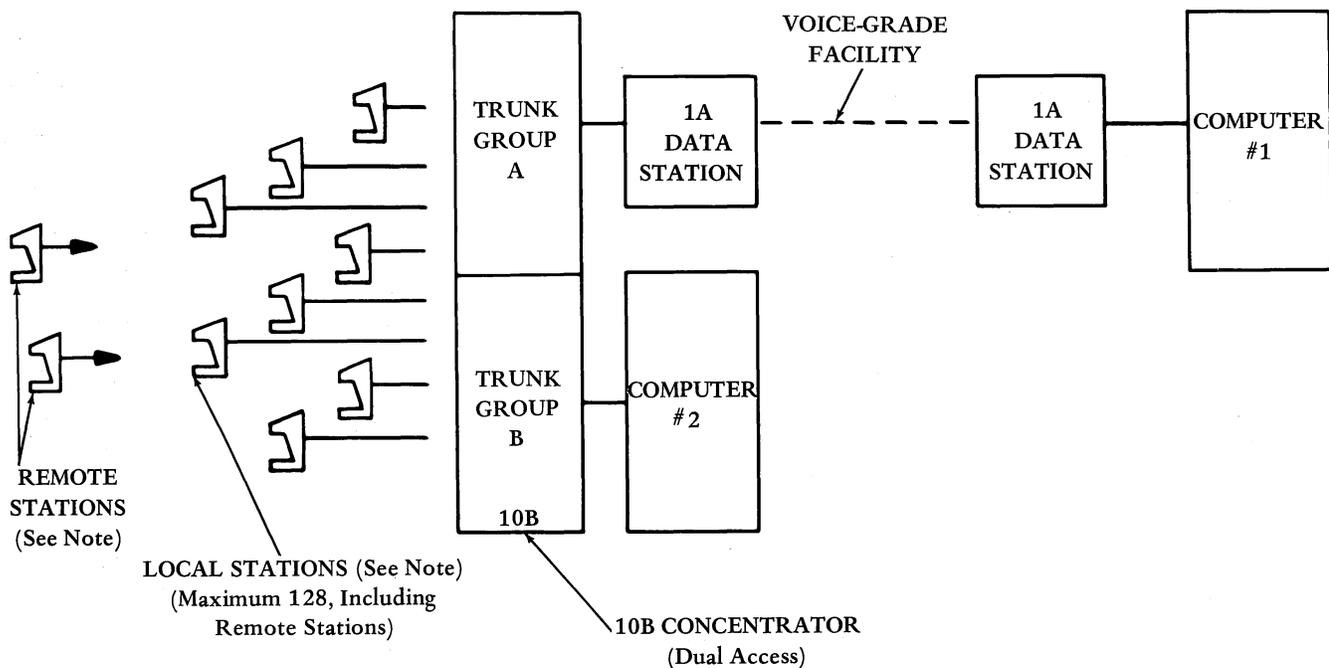
2.22 Figure 7 shows one computer located near the concentrator and one at a remote location. 1A data stations are used to connect the concentrator to the remote location. This particular arrangement of computers and concentrator, as well as all the arrangements described in this

practice, are intended to illustrate the teletypewriter station and its role in the system, and are not intended to reflect the many possible configurations this system may provide. Reference to the DLCS BSP was made in 2.03.

2.23 As stated in 2.21 the local stations have access to either trunk group. The remote stations, however, have access to one trunk group.

2.24 The interfacing and the options of the local stations are similar to those in configuration A. Station operation is a little different. To request service to trunk group A the station attendant operates the LINE 1 key on the 109C-type or 109F-type data set. To request service to trunk group B the attendant operates the LINE 2 key. If all trunks are busy in one of the trunk groups and the station attendant requests service for that trunk group, the station is camped on and receives a DELETE character every three seconds until a trunk becomes available. A busy condition in one trunk group does not prevent a station from accessing the other trunk group. Thus if the attendant requests service for trunk group B and a trunk is available the station will be connected regardless if trunk group A is busy or not.

2.25 The attendant terminates the call by depressing the OFF key, or if equipped with the EOT option the station will turn off upon transmitting or receiving EOT. As described in 2.14, if the data terminal ready lead option is installed in the computer port interface, the communication port may cause the connection to be released. If the connection is released, the station is put in a state where it is no longer connected to the computer, but not off. The trunk



**Note:** Local stations have access to both computers. Remote stations have access to only one of the two computers.

Figure 7 - One Cluster, More Than One Computer

is available to other stations. The station is put in a holding state connected to the concentrator with the teletypewriter motor running. In order to put the station in an off state, the OFF key at the station must be pressed. The OFF key must be pressed before a new request for service can be initiated.

#### D. Multiple Clusters, One Computer

2.26 Figure 8 is a simplified drawing of three clusters of stations accessing one computer via a 10A concentrator. The maximum number of stations passing through the 10A concentrator before going into the computer is 128. The local stations associated with the three local clusters are similar to local stations shown in configurations A, B, and C as regards interfacing, options, and operation.

#### Remote Stations

2.27 For each local cluster in the various configurations discussed thus far, two remote stations outside the cluster are shown. The actual number of remote stations that can be remotely located varies depending upon the number of stations in the cluster, the number of clusters, etc. It is possible that all stations working through a concentrator are remote stations.

2.28 Remote stations access the concentrator on private line voice or private line telegraph facilities. Stations equipped with data set 108C-type use the private line voice facilities; stations equipped with data set 108A-type use the private line telegraph facilities. Both the 108C-type and 108A-type data sets provide for full-duplex operation. The applicable BSP references for data sets 108C-type and 108A-type are listed in Part 3.

2.29 Data sets 108C-type or 108A-type mount in DAS 820D-L1A which in turn mounts inside the pedestal of the 33 or 35 teletypewriter set on a 180A backboard and 102A (33 set) or 96A (35 set) bracket.

2.30 Data auxiliary 820D-L1A provides the connective circuitry between data set 108-type, AR430 circuit pack, and the set logic assembly of the teletypewriter. The AR430 circuit pack provides the supervisory signaling necessary for the concentrator to recognize a request for service or request for disconnect from the station. The AR430 is further discussed in 2.38 and 2.39.

2.31 The TP186627 set logic assembly is the interface device between the teletypewriter and the data set. It mounts in front of the call control unit under the set cover

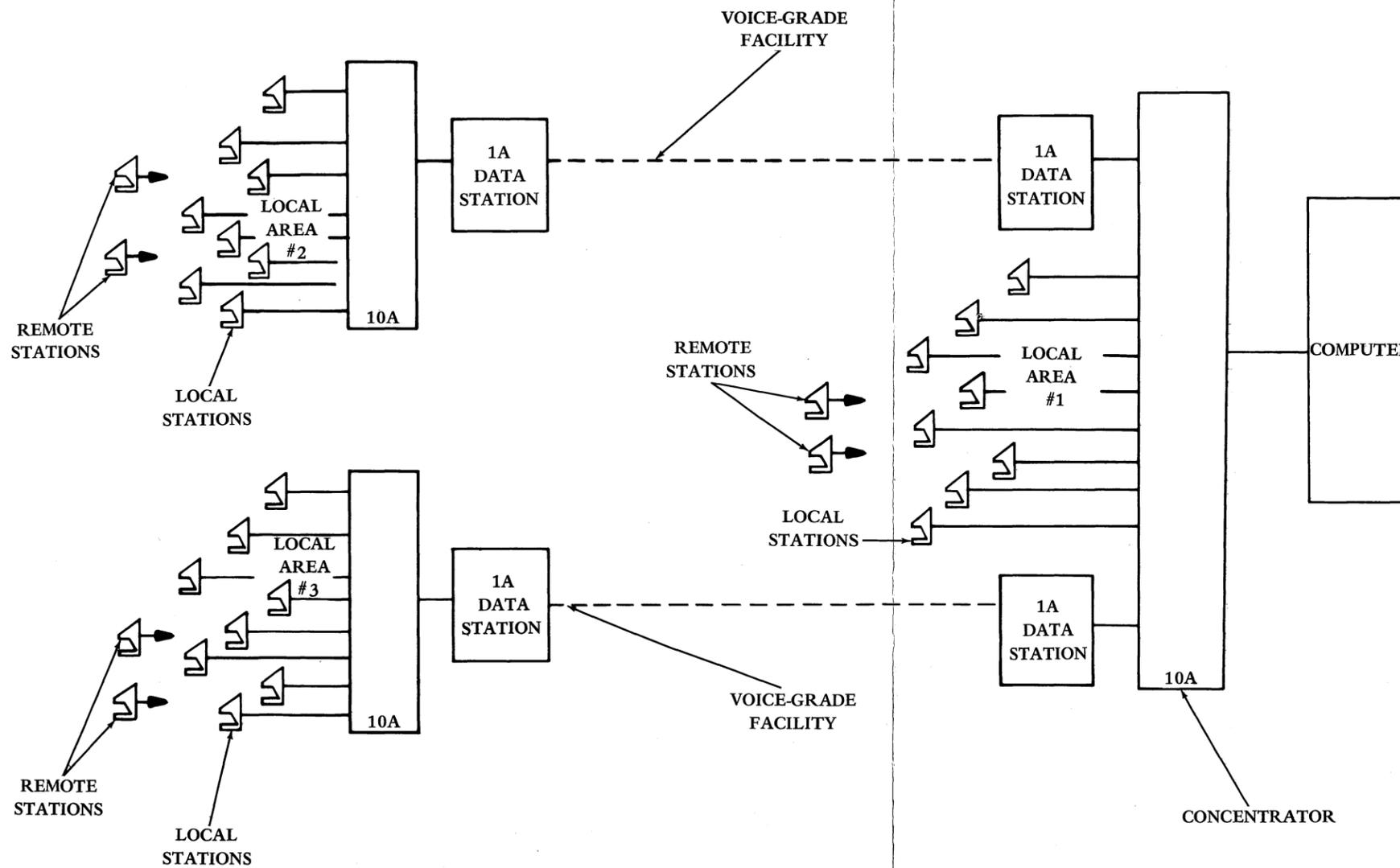


Figure 8 - Multiple Clusters, One Computer

to the right of the set. The TP186627 set logic assembly is shown in Figure 9. The set logic assembly accepts current, no-current data and control signals from the teletypewriter and converts them into polar signals for use by the data set. Likewise it accepts polar and control signals from the data set and converts them into current, no-current signals for use by the teletypewriter. The set logic assembly has a key assembly which contains the station controls. The key designations are:

OFF	ON	ALARM	LOCAL	OUT OF SERV	TEST
-----	----	-------	-------	-------------------	------

2.32 The interface provided by the set logic assembly and the data auxiliary set conform to EIA standard RS-232-B and is as follows:

DAS 820D-TYPE	TP186627 SET LOGIC ASSEMBLY
AB	AA
BA	BA
BB	BB
CF	CB
CA*	CC
CB*	AB
CC	CD
CD	CE

\*CA and CB are strapped in DAS 820D-type.

**Note:** Some circuits present in either DAS 820D-type or the set logic assembly are not functional. In the set logic assembly CB and CE are not functional.

**AA** – Protective Ground – Provides an interconnection of the teletypewriter and data auxiliary set frame ground. It may also be connected to the DAS signal ground (AB) as required by applicable regulations.

**AB** – Signal Ground – Provides the common-ground reference potential for all interchange circuits except circuit AA. It may also be connected to circuit AA or the frame, as required by applicable regulations.

**BA** – Transmitted Data – Delivers serial data signals originated by the teletypewriter to the data set.

**BB** – Received Data – Delivers data signals received by the data set to the teletypewriter.

**CC** – Data Set Ready – Signals on this circuit are generated by the data set to indicate it is ready to operate.

**CX** – Local Mode Control – Not applicable to Bell System teletypewriters.

**CF** – Data Carrier Detector – Delivers an indication to the teletypewriter when the data set detects carrier on the line.

**CD** – Data Terminal Ready – Signals on this circuit indicate to the data set that the teletypewriter is ready to transmit and receive data.

2.33 All data and control signals between the set logic assembly and the data set are polar. All terminators are sensitive to receive signals of  $\pm 3$  to  $\pm 25$  volts dc and all drivers to send signals of  $\pm 5$  to  $\pm 25$  volts dc. All data and control signals between the set logic assembly and the teletypewriter set are neutral dc signals.

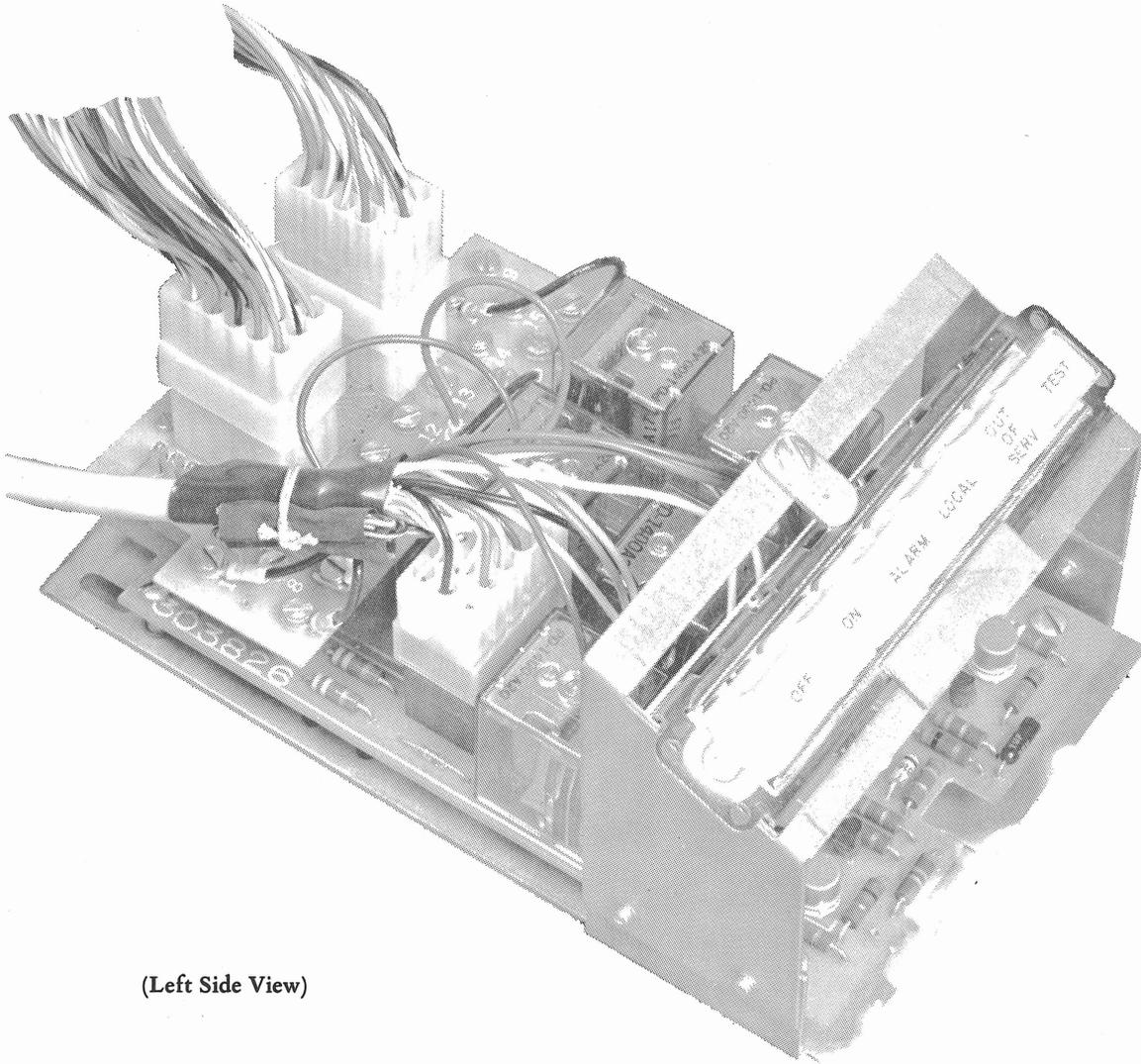
2.34 The set logic assembly may be optionally strapped for the station to derive local copy during transmission (similar to half duplex) or allowing remote traffic to be received when transmitting locally (similar to full duplex). If the set logic assembly is connected for full-duplex operation, a noninterfering line break feature is provided, whereby, if traffic is being received by the teletypewriter, line break may be transmitted without interfering with traffic being received.

2.35 Operation of the station controls provided by the set logic assembly is as follows:

**OFF** – Operating the OFF key turns off the teletypewriter motor, and turns off the CD lead. The data set sends a spacing signal to the line and receives a marking signal from the line. The OFF key is also used to mechanically release the LOCAL key and place the terminal in the idle condition.

**ON** – Depression of the ON key starts the teletypewriter motor, turns on the CD lead, starts the disconnect timing circuit, and lights the ON lamp. The station is now ready to request service.

**ALARM** – The ALARM key consists of an indicator lamp which lights when a low paper condition exists in the teletypewriter. The lamp will turn off when the paper supply is replenished.



(Left Side View)

Figure 9 - Set Logic Assembly

**LOCAL** – Depression of the LOCAL key places the station in the local mode. The motor turns on, the local lamp lights, the BA lead is held marking, and the CD lead is in the OFF condition. The teletypewriter can now be used to prepare tape for later transmission. Also, local copy can be prepared by either keyboard or tape reader operation. In the local mode, tapes can be edited and typing can be practiced. The station can be removed from the local mode by depressing the OFF key.

**OUT OF SERV** – Depression of the OUT OF SERV key places the station in the out of

service mode, lighting the OUT OF SERV lamp. Maintenance to the station can now be performed. In this mode the station cannot originate transmission until the OUT OF SERV key is released.

**TEST** – The TEST key is not functional unless locally engineered. The TEST key on the data auxiliary set serves for loop-back testing of the data station. However, being located within the teletypewriter this key is not easily accessible. The TEST key on the set logic assembly could be locally engineered to connect with the TEST key on the data auxiliary set.

2.36 Remote station operation is basically similar to that of local stations. The operator depresses the ON key on the set logic assembly. This is interpreted by the concentrator as a request for service. If a port at the computer is available the concentrator connects the station to the appropriate trunk. Unless alerted by the computer the station operator has no indication that a connection has been made. If no ports are available at the computer the station receives the camp-on signal. The concentrator sends a signal that appears to the station as a DELETE character. In responding to this signal the positioning mechanism of the typing unit makes an audible click which is the indication to the attendant that the station is camped on and will be served according to its order rank in the queue.

2.37 Remote stations have access to only one trunk group and one computer. Thus remote stations are not used in dual-access operation.

2.38 The AR430 circuit pack provides quasi-ternary supervisory control for the private line binary channels. The AR430 circuit pack is a circuit card which mounts in DAS 820D-type. The quasi-ternary supervision makes use of a continuous spacing condition as the idle or off signal, and a mark signal as a request for service. In the idle condition a space signal longer than a regular space signal (approximately 1 second or greater) is transmitted over the binary channel. This spacing condition is interpreted at the receiving location as an off condition. Placing the station in the on condition causes a marking signal to be transmitted which is interpreted by the supervisory circuit of the receiving terminal that the station is requesting service. Quasi-ternary supervision applies to both transmit and receive operation between the station and the concentrator.

2.39 The options provided by DAS 820D-L1A and AR430 circuit pack are summarized in Table A.

TABLE A

DAS 820D-L1A AND AR430 CP OPTIONS

FEATURE OR OPTION	OPTION DESIGNATION	FACTORY EQUIPPED	INSTALL IN	REMARKS
CD control of transmit supervision	ZC	X	TB1 of DAS 820D-L1A	This option may be applicable to DLCS on a locally engineered basis.
Key control of transmit supervision	ZD			
Camp-on detector	E	X	AR430 CP	Not used in DLCS.
CC turned off by CD	A	X		
CA looped to CB	H	X		
CA looped to CC	G			
Receive space timer	F			

Note: AR430 CP option H (factory-equipped) is not functional for DLCS.

SECTION 591-810-110

2.40 The options for remote stations provided by the set logic assembly are described in Table B.

E. Multiple Clusters, More Than One Computer

2.41 Figure 10 is a simplified drawing showing five clusters of stations accessing two computers. This configuration of stations does not purport to be an actual arrangement, but serves merely to illustrate the teletypewriter and teletypewriter related hardware. The local stations are the same as those described in previous configurations. The two remote stations shown at the limit of the various clusters are similar to the remote stations discussed under major heading D.

DLCS/DATA-PHONE Interconnection

2.42 The upper left part of Figure 10 shows a DLCS/DATA-PHONE interconnection on both sides of the 10B concentrator. The trunk side arrangement represents apparatus which permits local DLCS stations, connected directly to the 10B concentrator through dc metallic loop facilities; alternate access to DATA-PHONE stations. The line side arrangement represents apparatus which enables a DATA-PHONE station access to a computer port in the DLCS system through the 10B concentrator.

2.43 A local DLCS station intended for accessing DATA-PHONE stations must be equipped with List 3 or 4 of data sets 109C-type or 109F-type. List 3

TABLE B

TP186627 SET LOGIC ASSEMBLY OPTIONS

OPTION DESIGNATION	DESCRIPTION
A	<u>Half duplex</u> – The send circuit signals are fed into the receive circuit and the teletypewriter provides local copy.
B (Factory Wired)	<u>Full duplex</u> – The send circuit signals are isolated from the receive circuit in an on-line mode, and the teletypewriter is in full duplex.
C (Factory Wired)	<u>Low paper originating</u> – Allows the teletypewriter to originate a call in a low paper condition.
D	Not applicable in DLCS.
E	<u>Data terminal ready timer bypass</u> – Data terminal ready timing circuit is bypassed with this option.
F (Factory Wired)	<u>Distributor control</u> – Enables the distributor in the teletypewriter.

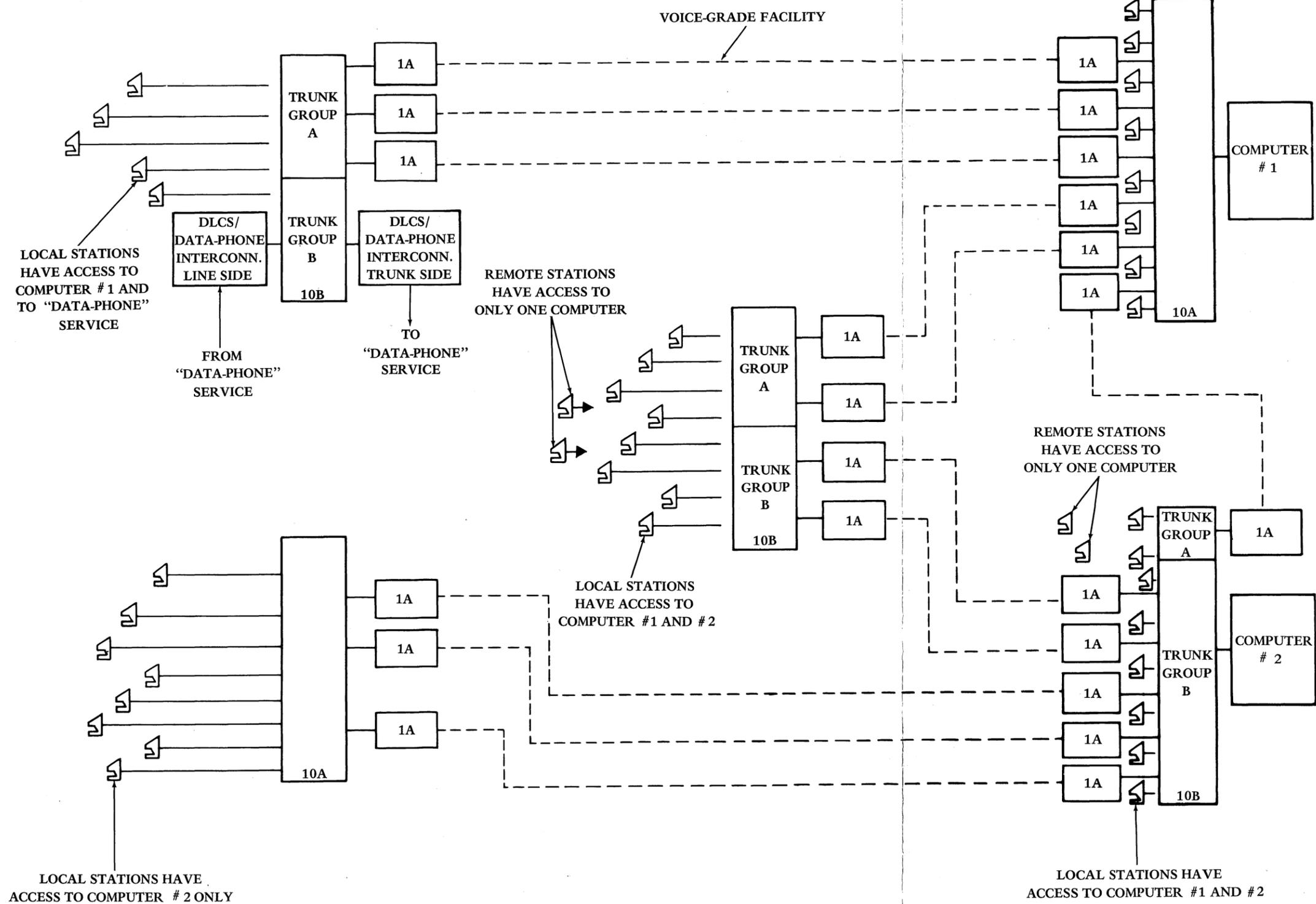


Figure 10 - Multiple Clusters, More Than One Computer

provides apparatus to equip data set 109C-L1 or -L1/2 with rotary dialing; List 4 provides apparatus to equip data set 109C-L1 or -L1/2 with TOUCH-TONE® dialing. Similarly for data set 109F-type. List 3 and 4 add rotary and TOUCH-TONE dialing respectively to data set 109F-L1 and -L1/2. Table C summarizes the features applicable to both data sets 109C-type and 109F-type with the various list numbers.

TABLE C

FEATURES FOR DATA SETS  
109C-TYPE AND 109F-TYPE

FEATURES	CODE
Basic data set (CPEU2 and keystrip)	L1
Data set equipped with ET1 circuit pack (EOT and send space timer)	L1/2
Data set equipped with rotary dial option	L1/3
Data set equipped with TOUCH-TONE dial option (includes ET2 circuit pack)	L1/4
Data set equipped with ET1 circuit pack and rotary dial option	L1/2/3
Data set equipped with ET1 circuit pack and TOUCH-TONE dial option (includes ET2 circuit pack)	L1/2/4

2.44 Operation of the local DLCS stations accessing DATA-PHONE stations is similar to other local stations. The attendant depresses the LINE 1 key to access trunk group A. In Figure 10 trunk group A connects the station to a computer port as described in 2.11 thru 2.14. To access a DATA-PHONE station via trunk group B the attendant depresses the LINE 2 key. The attendant can monitor call progress tones by means of the 731A-61 receiver associated with both the rotary and TOUCH-TONE dialers on either data set 109C-type or 109F-type. Only call progress

tones can be monitored at the local DLCS stations. No voice communication is possible with the DATA-PHONE station. To the DATA-PHONE station the local DLCS station appears as an "originate-only" station.

2.45 A local DLCS station can access a teletypewriter station in DATA-PHONE service. A DATA-PHONE station can access a computer port in DLCS through a 10B concentrator. A DATA-PHONE station cannot access a teletypewriter station in the DLCS.

2.46 A call is originated from a DATA-PHONE station by dialing the discrete number of a DDD line associated with the 10B concentrator. If a trunk is available the station becomes connected to the computer port. If no trunk is available the station is camped on and receives a DELETE character every three seconds, similar to a DLCS station.

2.47 DATA-PHONE stations accessing computer ports in the DLCS may disconnect by the computer turning port circuit CD off, by the stations terminating the call, or if equipped with the EOT option the stations will turn off either by reception or transmission of the EOT code. Local DLCS stations disconnect in a similar fashion, by depressing the OFF key, by the computer turning port CD off, or by means of the EOT option. When the disconnect originates at the computer port the local station does not turn off but continues to run. The attendant must first turn off the station by operating the OFF key before again requesting service.

F. Eight or Fewer Stations Remote From One Destination

2.48 Figure 11 is a simplified drawing showing teletypewriter configurations with the 1A data station multichannel arrangement (MCA). Figure 11 shows 4 stations connected to the 1A data station, MCA, passing through a distant 1A data station MCA to access a computer port or a concentrator.

2.49 The 1A data stations MCA shown in Figures 6, 7, 8, 10, and 11 multiplex up to 8 double-width 150 baud channels over a voice-grade facility to other 1A data stations MCA and connect them to computer ports or to a concentrator. The description that follows is intended to reflect the operation of teletypewriter stations connecting directly with the 1A data station.

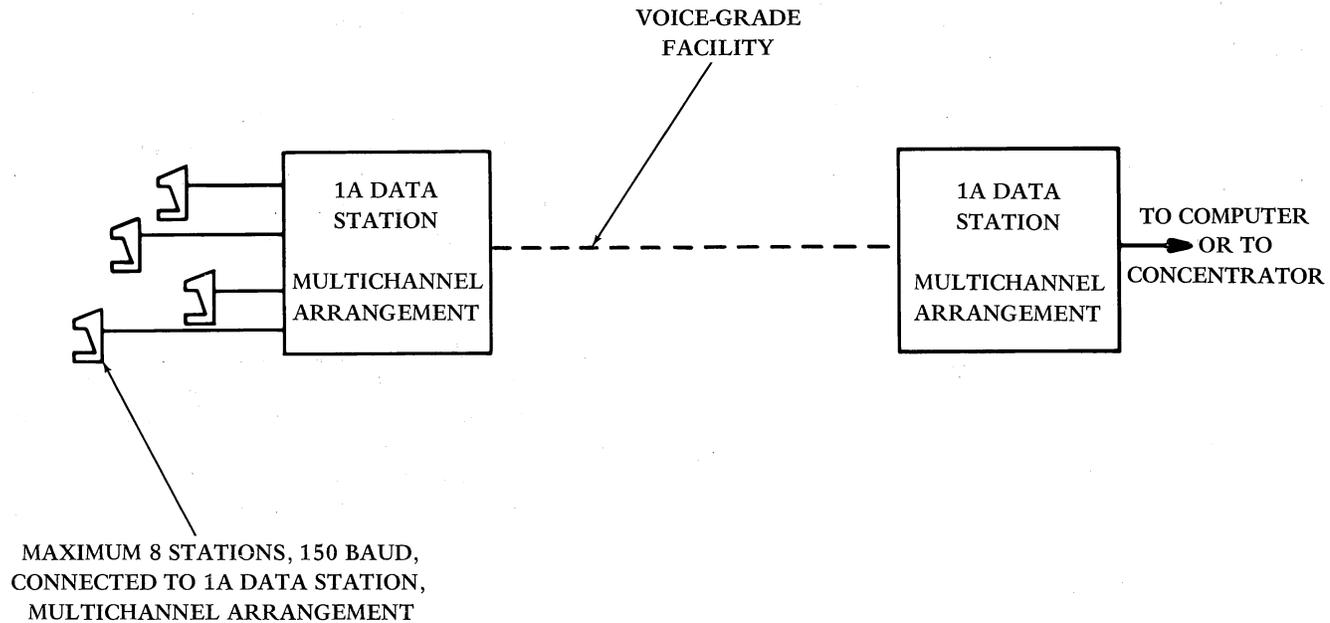


Figure 11 - Eight or Fewer Stations Remote From One Destination

2.50 The 1A data station MCA multiplexes up to 8 double-width (150-baud) channels plus one single width channel over a 4-wire facility. The teletypewriter stations connect with the 1A data station on an EIA voltage basis. The TP186627 set logic assembly described in 2.31 is the interface between the teletypewriter and the 1A data station. The TP186627 provides the operator controls for the teletypewriter station as shown in 2.31.

2.51 DAS 811G-L1 and DAS 811H-L1 are the interface devices for the 1A data station MCA. The interface circuits for both the 1A data station MCA and the TP186627 are shown in Table D.

2.52 The operation with the 1A data station is ternary. Ternary operation provides means for the transmission and detection of supervisory signals (station-on, station-off information) as well as the normal binary data. Supervisory information from the channel terminal to the teletypewriter is presented on circuit CC (data set ready).

Supervisory information from the teletypewriter station to the 1A data station is presented on circuit CD (data terminal ready).

2.53 Station operation with the 1A data station MCA is similar to remote station operation. The attendant depresses the ON key on the set logic assembly. If a trunk is available the concentrator connects the station to a computer port. If no ports are available the station is camped on until a port becomes available.

2.54 Call disconnect is likewise similar to remote stations. A disconnect may be originated at the teletypewriter station by operation of the OFF key, by the computer port turning circuit CD off, or by transmission or detection of the optional EOT. As previously mentioned, a computer port originated disconnect by means of turning circuit CD off does not turn the station off. The teletypewriter station operator must first disconnect the station before again requesting service.

TABLE D

## 1A DATA STATION MCA AND TP186627 SET LOGIC ASSEMBLY INTERFACE CIRCUITS

1A DATA STATION MULTICHANNEL ARRANGEMENT	Provided by DAS 811G-L1 and DAS 811H-L1	TP186627 SET LOGIC ASSEMBLY
AA – Protective Ground		AA
BA – Transmitted Data (From TTY station)		BA
BB – Received Data (To TTY station)		BB
CA – Request to Send		
CB – Clear to Send		CB*
CC – Data Set Ready		CC
AB – Signal Ground		AB
CF – Data Carrier Detector		
Data Set Test (+24 v)		
Data Set Test (-24 v)		
CD – Data Terminal Ready		CD
		CE* - Ring Indicator

\*Not used in DLCS.

SECTION 591-810-110

3. REFERENCES

<u>Section</u>	<u>Title</u>
574-010-100	33 and 35 Teletypewriter Sets for EIA and Direct Neutral Interface – Description
574-100-401	33 ASR, KSR, RO – Wiring Diagrams
574-202-400	35 ASR, Actual and Schematic Wiring Diagrams
574-201-400	35 KSR, Actual and Schematic Wiring Diagrams
574-123-102	UCC29 – Description
574-123-800	UCC29 Parts, TP186627 Set Logic Assembly Parts
591-810-210	33 and 35 Stations for DLCS – Installation
591-810-100	10-Type Data Line Concentrator System – Description
591-035-101, -201, -301, -501	Data Set 109F Used in DLCS
591-031-101, -201, -301, -501	Data Set 109C-Type Used in 10-Type Data Line Concentrator System
598-073-100	Data Auxiliary Set 811G-Type
598-074-100	Data Auxiliary Set 811H-Type
591-811-100, -200, -300, -500	10A Data Line Concentrator
591-811-101, -201, -301, -501	10B Data Line Concentrator
591-023-110, -210, -310, -510	Data Set 108A or 108C-Type
591-811-103	DATA-PHONE Interconnection Arrangement for 10-Type Concentrator – Line Side
591-811-104	DLCS/DATA-PHONE Interconnection Arrangement for 10-Type Concentrator – Trunk Side