PACIFIC COMPANY NETWORK (PAC-Net)
DATA-PHONE
STATION TESTING

Contents Page

1. GENERAL

1.01 This section is issued to:

(a) Describe the tests a teletypewriter (TTY) installer/repairman must make to the Data Test Center (DTC) and the PAC-Net Control Operator from a PAC-Net TTY on DATA-PHONE Service.

(b) Outline the responsibilities of the DTC for PAC-Net TTY DATA-PHONE users.

(c) Provide a brief description of PAC-Net.

2. DEFINITIONS

2.01 PT address codes: Pacific Telephone (PT) address codes consist of three alpha characters plus one to four numerics. The third alpha identifies the operating geographical area. For example, PTB and PTC identify Bay and Central Counties geographic areas in the Bay Sector. General Administration uses the identification PTA.

2.02 DATA-PHONE Service: Any circuit using Western Electric type data sets to transmit data over switched exchange facilities on the DDD network.

2.03 PAC-Net DATA-PHONE TTY Station: A DATA-PHONE TTY arrangement using Model 28, 33 or 35 station equipment modified to meet the following additional requirements:

(a) Reader Control is coded to start on ACK (control F for Model 33 or 35 — Figs A for Model 28) and stop on ETX (control C for Model 33 or 35 — Figs C for Model 28).

(b) Answerback Drum contains "PT" code.

NOTE: All DATA-PHONE TTY terminals in a hunting or rotary group are considered to be one station.

2.04 Answerback Drum on DATA-PHONE Stations: The answerback drum is made up of 21 characters, functions, alphas and numerics. It must be coded for even parity. To validate a station, the Electronic Message Switcher (EMS) looks for a P, a T, an alpha character (area designator by geographic location) up to 4 numerics, and an alpha character for hunting groups. Spaces, asterisks, etc., after the PT(x) or numerics are ignored. The recommended answerback arrangement for PAC-Net stations is shown here:

Answerback Drum

Slot	Coding
Start	Supp
1	CR or delete
2	LF
3	Rubout
4	Alpha (P)
5	Alpha (T)
6	ALPHA-GEOGRAPHIC DESIGNATION A — General Administration B — Bay C — Central Counties L — Los Angeles Central N — Northern Counties P — Los Angeles North R — Nevada S — Southern Counties
7	Numeric
8	Numeric, Alpha, if rotary station, or supp.
9	Numeric, Alpha, if rotary station, or supp.
10	Numeric, Alpha, if rotary station, or supp.

11	Numeric, Alpha, if rotary station, or supp.
12	Supp
13	Supp
14	Supp
15	Supp
16	Supp
17	Supp
18	CR
19	LF
20	ACK

2.05 Data Test Center: The office responsible for establishing, rearranging, and maintaining DATA-PHONE Service.

2.06 PAC-Net: A TTY communications system using Electronic Message Switchers (EMS's) leased from and maintained by Texas Instruments Company for the transmission of messages between Official Company TTY stations on either private line or DATA-PHONE Service.

2.07 PAC-Net Control: The location of the Texas Instruments EMS.

3. DESCRIPTIONS OF PAC-Net:

3.01 PAC-Net is a TTY communications system using electronic message switching for the transmission of Universal System Service Orders (USSO's), Intercompany Services Coordination (ISC) messages, and Administrative messages between Official Company Private Line and DATA-PHONE TTY stations.

3.02 The system comprises 2 Model 980A Electronic Message Switchers (EMS), leased from Texas Instruments Inc. The EMS can connect to approximately 1,200 Private Line or DATA-PHONE Official Company TTY stations. The EMS's are maintained by Texas Instruments. One EMS is located at 85 Second Street, San Francisco, and the other at 818 West 7th Street, Los Angeles. The switchers are connected via private line data circuits for interregional traffic. Each EMS also provides PAC-Net users send and receive capabilities to Long Lines Administrative Data Network (AD-Net) stations.

3.03 The EMS's operate on a store and forward basis and provide multiple addressing from a single input message. The EMS's also provide speed and code conversion which allows each station on the system to communicate with any other station or stations on the network, regardless of speed, type of service (Private Line or DATA-PHONE) or type of code (8-level ASCII or 5-level BAUDOT).

4. NETWORK ADMINISTRATION

4.01 The Corporate Communications Manager of Pacific Telephone, located in San Francisco, is responsible for the administration of the overall PAC-Net system.

4.02 The Northern Region Official Services Account Manager, in San Francisco, is responsible for the administration and operation of the PAC-Net Control Center in San Francisco and the administration of the network in the Northern Region.

4.03 The Los Angeles Official Services Account Manager is responsible for the operation and administration of the PAC-Net Control Center in Los Angeles and the administration of the network in Los Angeles Central.

4.04 The Data Test Center (DTC) is circuit Plant Control Office (PCO) for DATA-PHONE Service, in accordance with BSP 668-095-900PT. As circuit PCO, the DTC is responsible to:

(a) Coordinate the installation of service to meet customer's requirements.

(b) Guarantee the quality of service that is turned up to the customer.

(c) Coordinate maintenance of the circuit to guarantee continuing quality of service to the customer.

5. INSTALLATION

5.01 On completion of the normal DATA-PHONE installation work in accordance with prescribed BSP's, the installer/repairman shall call the DTC and request tests be made from the testboard.

5.02 The DTC shall make the required DATA-PHONE circuit order tests, as well as an additional test for PAC-Net station requirements.

5.03 To test a DATA-PHONE TTY for PAC-Net requirements, the installer will:

(a) Prepare a tape using the format in Exhibit 1 for Model 33 or 35 equipment or in Exhibit 2 for Model 28 equipment.

(b) Insert the tape in the transmitter, and dial the appropriate DTC DATA-PHONE number.

NOTE: On Model 35 equipment, place the TD Call in the "on" position.

(c) The call will be answered automatically by the Data Test Center TTY as follows:

Data Test Center Response	Station Response
Transmits "Data Test Center," return L.F., ACK	Transmitter starts
	Transmitter sends all copy up to ETX and stops.
Data Test Center receives all copy up to ETX. Data Test Center puts his TTY in KT mode and sends 10 rubouts.	
	On 33 TTY stations, put the stop run switch in free position:
Data Test Center Send Control E (WRU)	Station sends its answer back to Data Test Center.
Data Test Center checks answer back on its received tape.	
	NOTE: 33 TTY stations restore stop-run switch to auto position.
Data Test Center transmits test results to station	Receives information from DTC.
DTC sends Control F (ACK)	Transmitter restarts and send EOT and call disconnects.

5.04 On completion of the PAC-Net tests, the DTC will call the regional PAC-Net Control Center, report the DATA-PHONE number and PT code of the newly-installed station, and request that station be taken off non-service.

5.05 The PAC-Net operator will send a message to that station. Receipt of the message verifies the EMS has the correct PT code and DATA-PHONE number and has been taken off non-service. The station is ready to accept traffic.

5.06 The installer will instruct the PAC-Net user to prepare a multiple addressed message to his own station, to the DTC, and to the regional PAC-Net Control Center (PTB 000 in the Northern Region and PTL 000 in the Southern Region) informing them the station is ready for service. Receipt of the message at the station and the DTC will signify the teletypewriter is in service. This should be confirmed with a telephone call to the DTC. The installation is then complete, in accordance with Section 668-095-900PT, Paragraph 4.01, subparagraph O.

6. MAINTENANCE TESTING

6.01 On arrival at the customer's location, the repairman should discuss the trouble with the attendant who reported the malfunction, if possible. He should have the attendant try to duplicate the trouble condition to aid him in his analysis. He should also check the hard copy and tape format for any operating error.

6.02 The repairman or DTC will ask the user to call the Regional PAC-Net Control Center to have the station in trouble placed on non-service if this action has not already been taken.

6.03 The repairman will call the DTC and request tests be made from the testboard. When the trouble has been located and cleared, the DTC will contact PAC-Net Control Center and request the station be taken off non-service.

6.04 The PAC-Net operator will send a message to the station, stating the station has been taken off non-service.

10 Deletes	Leader used to insert tape in tape reader
CTRL A Delete	(SOH) Start of header
PT Code for Data Test Center (space)	Address codes of called stations (each address must be followed by a space)
CTRL B Delete	(STX) Start of text
Return, Line Feed, Delete	The text is preceded by Return, Line Feed, Delete
CTRL K Delete, Delete	(VT) Vertical tabulation. Positions paper on sprocket feed machine so that first line of text is on 15th line of page
ORG PT Code (City)	The letters ORG followed by address code and city of originator
Return, 2 Line Feeds, Delete	
10 Deletes	To allow for tape splicing, if required
8 Spaces	To indicate a paragraph
Text of Message This is a test (City)	
Return, 3 Line Feeds, Delete	To separate text from signature
J. Smith /LG/	Signature, 2 spaces, oblique, attendant's initials, oblique
Return, Line Feed, Delete	
1255 2/1/73	Time, 2 spaces, date
Return, 2 Line Feeds, Delete	
CTRL C Delete, Delete	(ETX) End of text
CTRL L Delete, Delete	(FF) Form feed
CTRL D 10 Deletes or repeat all steps	(EOT) End of transmission on next message

Format for Message Preparation for
Models 33 and 35 TTY on DATA-PHONE
EXHIBIT 1

10 LTRS	Leader used to insert tape in tape reader
FIGS A LTRS	(SOH) Start of header
PT Code for Data Test Center (space)	Address codes of called stations (each address must be followed by a space)
FIGS B LTRS	(STX) Start of text
CAR RET, LF, LTRS	The text is preceded by Carriage Return, Line Feed, Letters
FIGS K LTRS LTRS	(VT) Vertical tabulation. Positions paper on sprocket feed machines so that first line of text is on 15th line of page
ORG PTB 000 SAN FRANCISCO	ORG, Address, originating city
CAR RET, 2 LF, LTRS	
10 LTRS	To allow for tape splicing, if required
8 Spaces	To indicate a paragraph
Text of Message	
CAR RET, 3 LF, LTRS	To separate text from signature
B. JONES /MS/	Signature, 2 spaces, oblique, attendant's initials, oblique
CAR RET, LF, LTRS	
1230 2/1/73	Time, 2 spaces, date
CAR RET, 2 LF, LTRS	
FIGS C LTRS, LTRS	(ETX) End of text
FIGS L LTRS, LTRS	(FF) Form feed
FIGS H 10 LTRS or repeat all steps	(EOT) End of transmission or next message

Format for Message Preparation for
Model 28 TTY on DATA-PHONE
EXHIBIT 2