PERFORMANCE REPORTING OPTION (PRO) 150

DESCRIPTIVE INFORMATION

CALL MANAGEMENT SYSTEM (CMS)

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† Registered trademark of AT&T.

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CONTENTS	PAGE

CONTENTS	PAGE

1. GENERAL

1.01 This practice describes the physical, functional, and operational characteristics and limitations of the Peformance Reporting Option (PRO) 150.

1.02 Whenever this section is reissued, the reason(s) for reissue will be listed in this paragraph.

1.03 *Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at*

his own expense will be required to take whatever measures may be required to correct the interference.

1.04 The PRO 150 provides the necessary performance reports and other management information on the customer premises to promote the most efficient use of a service in which many incoming calls are routed to groups of attendants (agents). The PRO 150 is located on customer premises and operates in conjunction with a DIMENSION* 2000 PBX which has Automatic Call Distribution (ACD) Service. A Call Management System (CMS) consists of a communication system (PBX) and a PRO 150 working together. The PBX provides switching, queuing, and reporting of call related events. The PRO 150 uses the information to create statistical performance reports for the CMS supervisors.

1.05 The PRO 150 provides the customer with reports about agents, trunks, splits, and forecasts. The PRO 150 also provides the capability for system reconfiguration. Reports and reconfiguration commands may be displayed on black and white or color video display terminals or on a hard copy produced from the line printer.

1.06 The PBX provides all switching and translation functions for the PRO 150. A data channel in the PBX and a peripheral interface circuit (PIC) provides the interface between the PBX and the PRO 150.

2. EQUIPMENT DESCRIPTION

2.01 The PRO 150 consists of the following equipment (Fig. 1):

- PDP 11V03 Minicomputer
- DATASPEED 40 Printer
- One to three video display terminals, one of which comes with the minicomputer. See peripherals in later paragraphs.
- Software, on Floppy Disk
- 212AR Data Set (optional)
- 202T Data Sets (optional)
- Prentice Electronics Corp Asynchronous Line Drivers (ALDs) (optional)
- 2565HKM Telephone Set (optional).

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2.02 The 11V03 minicomputer receives agent and facility status information from the PBX via the PIC. System configuration and call handling statistics are displayed in graphic or text report form on a display terminal. Hard copies of text reports are printed on a DATASPEED 40 printer.

COMPUTER EQUIPMENT

A. PDP 11V03 Minicomputer

2.03 The 11V03 minicomputer receives information from the PIC and from this information provides reports for the supervisors of the CMS. The cabinet measures 54.6 cm wide by 76.2 cm deep by 78.7 cm high (21.25 in. by 30 in. by 31 in.), is wheel mounted, and weighs 93 kg (205 lb).

2.04 The 11V03 consists of an LSI-11 minicomputer, an RX02 floppy disk system, and serial interfaces to peripheral units.

2.05 Nine Electronic Industries Association (EIA) 25 pin RS-232 connectors are located in the rear of the cabinet for all peripheral connections (eg, PIC, terminals, and line printer).

2.06 The 11V03 minicomputer is always configured for the maximum number of agents (143). This permits agents to be added without changing the PRO 150 configuration.

B. RX02 Floppy Disk Unit

2.07 The RX02 is a double-density, dual drive unit located in the minicomputer cabinet below the processor and is operated by one controller. The RX02 uses industry-standard 20.32 cm (8 in.) diskettes which are thin, flexible, oxide-coated disks slightly larger than a 45-rpm phonograph record.

C. Software

2.08 The PRO 150 software provides the operating system and programming necessary for the 11V03 minicomputer to function as a part of the system. All system software is contained on each diskette. There are two diskettes on line simultaneously. One provides a duplicate copy for backup in the event of a failure. Comparison of disks provides protection against errors.

PERIPHERAL EQUIPMENT

A. DATASPEED 40 Printer

2.09 The DATASPEED 40 printer is a receive only printer (ROP) equipped with a pedestal, pedestal tabletop, and optional paper rack. The printer measures approximately 50.8 cm wide by 44.1 cm deep by 27.9 cm high (20 in. by 17.38 in. by 11 in.) and weighs 40 kg (93.5 lb). The pedestal and tabletop measure 50.8 cm wide by 60 cm deep by 64.1 cm high (20 in. by 23.63 in. by 25.25 in.) and weighs 11.3 kg (56 lb). This ROP prints up to 80 columns and uses tractor feed.

B. VT 100 Display Terminal

2.10 The VT100 display terminal is a black and white terminal that measures 44.7 cm wide by 36.2 cm deep by 36.8 cm high (18 in. by 14.25 in. by 14.5 in.). The keyboard measures 44.7 cm wide by 20.3 cm deep by 8.9 cm high (18 in. by 18 in. by 3.5 in.). This terminal is always provided with the minicomputer as the primary means of controlling and maintaining the system. Additional VT100 display terminals or other terminals (paragraphs 2.11 and 2.12) are permitted, up to a maximum of 3 terminals per PRO 150 system.

C. DATASPEED 40/2 Terminal Set

2.11 This terminal is a black and white terminal that measures approximately 43.2 cm wide by 63.5 cm deep by 47.9 cm high (17 in. by 25 in. by 18.88 in.) and weighs 41.4 kg (92 lb).

D. INTECOLOR 8001GB Display Terminal

2.12 This display terminal is a color terminal that measures 49.2 cm wide by 57.2 cm deep by 8.3 cm high (19.38 in. by 22.5 in. by 17.5 in.). The keyboard measures 35.7 cm wide by 14 cm deep by 8.3 cm high (14.06 in. by 5.5 in. by 3.25 in.). The combined weight is 38.3 kg (85 lb).

E. 212AR Data Set

2.13 The 212AR (L1/2) measures approximately 15.2 cm wide by 27.9 cm deep by 5.1 cm high (6 in. by 11 in. by 2 in.). This data set (or equivalent) is used for the remote maintenance dial-up port. This data set can operate at a low speed of 300 baud and at a high speed of 1200 baud. The data set should be set for 1200 baud operation.

F. 202T Data Sets

2.14 The 202T data sets measure approximately 14.6 cm wide by 27.3 cm deep by 5.7 cm high (5.75 in. by 10.75 in. by 2.25 in.). These data sets (or equivalent) operate at 1200 baud and are used when the cable distance between a video display terminal and the 11V03 minicomputer exceeds 304.8m (1000 ft). Only one terminal may be installed remotely [over 91.4m (300 ft)] from the computer. Terminals between 91.4 and 304.8m (300 and 1000 ft) from the minicomputer are considered remote (1200 baud) but do not require a data set.

G. Prentice Electronics Corp Asynchronous Line Drivers (ALDs)

2.15 The ALDs are used between the PIC and the minicomputer interface when the distance is greater than 22.9m (75 ft). The ALD can operate over a wide range of baud rates but should be configured to pass data at 1200 baud for the PRO 150.

3. FUNCTIONAL DESCRIPTION

COMPUTER EQUIPMENT

A. PDP 11V03 Minicomputer

3.01 The 11V03 minicomputer is the heart of the PRO 150. The 11V03 minicomputer receives traffic data from the PBX. This data is used to update reports from files within the data bases. Use of the minicomputer allows a supervisor to be aware of agent, trunk, split, and system status over a given interval and to view call-handling statistics. The 11V03 minicomputer is configured for systems containing up to and including 143 agents. The system requires 32K 16-bit words of solid-state memory. The floppy disk unit is part of the minicomputer hardware and is accessed as needed by the 11V03 minicomputer when reading from or writing to the data base and creating reports.

3.02 The 11V03 minicomputer has nine peripheral port connectors of which up to five can be used for terminal devices. One port is used for maintenance (dial-up), one for a line printer, and up to three for user display terminals. The terminals may be color or black and white. One port is used to communicate with the PBX (Fig. 1).

```
        ┌─────┐   ┌─────┐
        │ ALD │   │ ALD │
        └─────┘   └─────┘
          ↓         ↓
FROM PBX    22.9M (75 FT)       ┌──────────────────┐
VIA PIC <─────MAXIMUM─────>     │     11V03         │
                                │   MINICOMPUTER    │
                                ├──────────────────┤
              15.2M             │                   │      91.4M (300 FT) MAXIMUM    ┌──────────────┐
  ┌────────┐  (50 FT)           │   DLV11-J (0)     │───────────────────────────────│  TERMINAL 0  │
  │ 212AR  │  MAXIMUM           │   SERIAL          │                                │   (BLACK     │
  │ DATA   │──────────          │   LINE            │                                │  AND WHITE)  │
  │ SET    │                    │   UNIT            │                                └──────────────┘
  └────────┘                    │                   │
      │                         ├──────────────────┤      91.4M (300 FT) MAXIMUM    ┌──────────────┐
      │                         │                   │───────────────────────────────│  TERMINAL 1  │
  ┌────────────┐                │                   │                                │ (BLACK AND   │
  │  2565HKM   │                │                   │                                │  WHITE OR    │
TO DIAL-UP  │  MAINTENANCE │    │   DLV11-J         │   ┌──────┐  ┌──────┐            │   COLOR)     │
MAINTENANCE─┤  TELEPHONE   │    │   (1)             │   │ 202T │  │ 202T │            └──────────────┘
DATA LINK   │  SET         │    │   SERIAL          │   │ DATA │  │ DATA │
  └────────────┘                │   LINE            │   │ SET  │  │ SET  │            ┌──────────────┐
                                │   UNIT            │   └──────┘  └──────┘            │  TERMINAL 2  │
                                │                   │<<──304.8M (1000 FT)──>>─────────│ (BLACK AND   │
                                │                   │   MAXIMUM (1200 BAUD)           │  WHITE OR    │
                                │                   │    91.4M (300 FT)               │   COLOR)     │
                                │                   │    MAXIMUM (4800                └──────────────┘
                                │                   │    OR 9600 BAUD)
                                ├──────────────────┤      91.4M (300 FT) MAXIMUM    ┌──────────────┐
                                │   DLV11-E         │───────────────────────────────│  DATASPEED   │
                                │   SERIAL          │                                │  40 PRINTER  │
                                │   INTERFACE       │                                └──────────────┘
                                ├──────────────────┤
                                │   RX02            │
                                │   FLOPPY DISK     │
                                │   DRIVE           │
                                └──────────────────┘
```
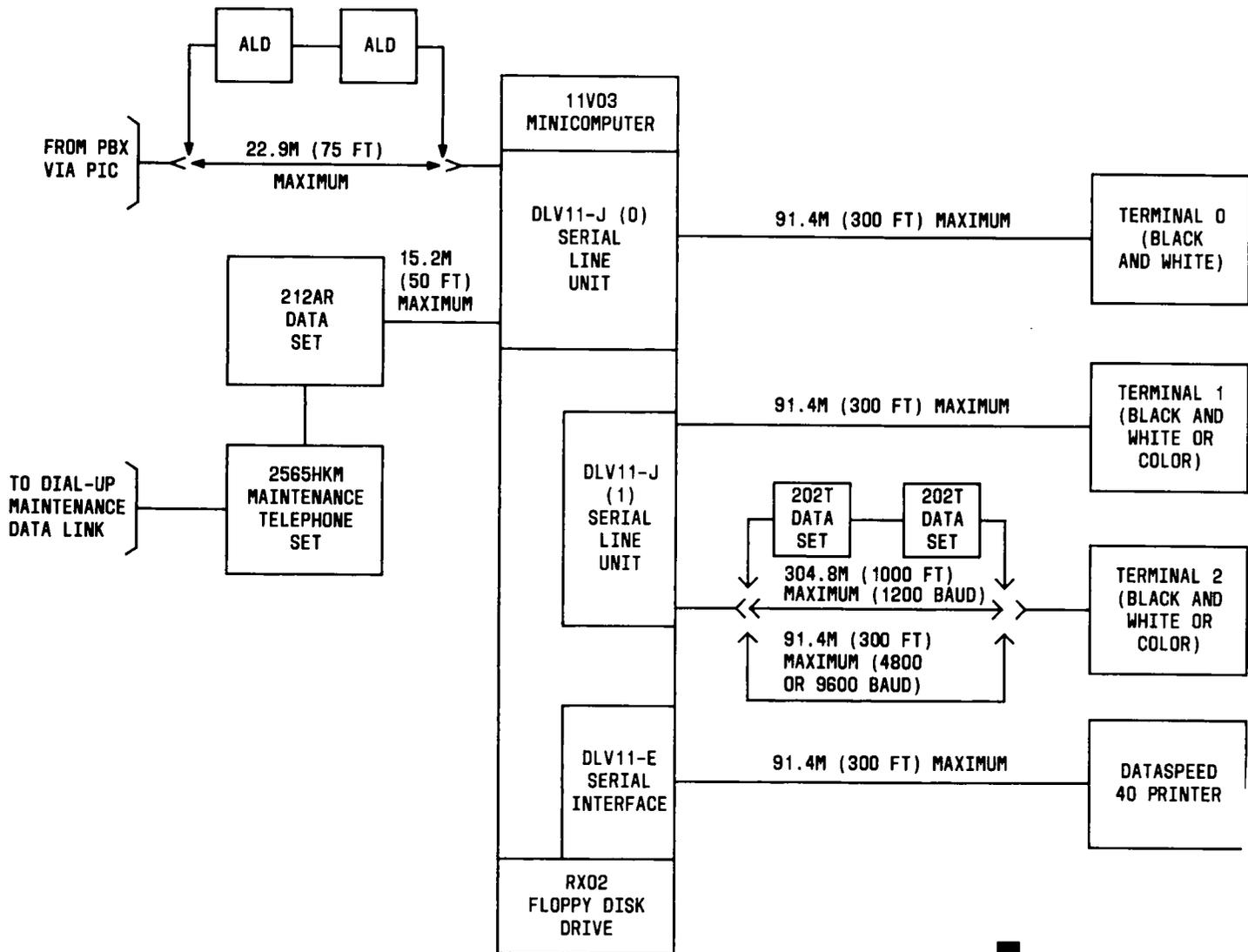
Fig. 1—Block Diagram of PRO 150 Equipment

B. RX02 Floppy Disk Unit

3.03 The RX02 contains two floppy disk drives operated by one controller. Two disk drives, each containing a diskette, are on line simultaneously. Each diskette has a storage capacity of 512K 8-bit bytes. A diskette is a thin, flexible, oxide-coated disk. The diskette is permanently contained in a 20.3 cm (8-in.) square, flexible envelope and is recorded only on one side. A diskette rotates at 360 rpm.

PERIPHERAL EQUIPMENT

A. DATASPEED 40 Printer

3.04 This ROP operates at 4800 baud in 80-column format. The ROP may be used up to 91.4m (300 ft) from the 11V03 minicomputer and connects to the DLV11-E serial line unit (Fig. 1). The printer is used to produce a hard copy of reports that have been routed to it from the display terminals and reports which are scheduled for daily printing.

B. VT100 Display Terminal

3.05 The VT100 display terminal is an interactive black and white terminal, operating in full duplex with no parity. The terminal can operate at 4800 baud up to 91.4m (300 ft) (cable distance from the 11V03 minicomputer) and at 1200 baud for distances of 91.4m (300 ft) or greater when used as a "remote" terminal. Terminals over 304.8m (1000 ft) from the computer require a data link (paragraph 3.12). When used for maintenance, the terminal should be located close to the 11V03 minicomputer.

3.06 The terminal is used to schedule and display reports and to reconfigure the system. If this is the primary or only terminal, it is also used to boot the system after a crash. One VT100 display terminal is supplied per system. Additional VT100 display terminals or other terminals (paragraphs 3.07 and 3.09) are permitted, up to a maximum of 3 terminals per system.

C. DATASPEED 40/2 Terminal Set

3.07 This terminal is an interactive black and white terminal, operating in full duplex with no parity. It operates at 4800 baud up to 91.4m (300 ft) (cable distance from 11V03 minicomputer). At 1200 baud and distances of 91.4m (300 ft) or greater (Fig. 1), operation is considered "remote". For dis-

tances over 304.8m (1000 ft), a data link is required (paragraph 3.12).

3.08 This terminal may be used as a second or third terminal (three terminals maximum) to schedule and display reports and reconfigure the system. If this is the primary terminal, it is used to boot the system.

D. INTECOLOR 8001GB Display Terminal

3.09 This display terminal is an interactive color terminal, operating in full duplex with no parity. The terminal operates at 9600 baud up to 91.4m (300 ft) (cable distance from the 11V03 minicomputer) and at 1200 baud for greater distances. At distances over 304.8m (1000 ft), a data link is required (paragraph 3.12). If a second color terminal is used, it may operate at 9600 baud if port 7 is rewired for that baud rate or at 1200 baud otherwise.

3.10 The color terminal is used to schedule and display traffic and forecast reports and can be used to reconfigure the system. Color bar-graph reports can be displayed only on a color terminal.

E. 212AR Data Set

3.11 This data set (or equivalent) is used as an interface to the 11V03 minicomputer through a dial-up line arrangement. One data set is used on the 11V03 minicomputer end and another on the remote terminal end. This data set is used over the standard switched network. The 212AR L1/2 operates at 1200 baud in full duplex mode for the dial-up arrangement and is used in combination with a telephone set (Fig. 1).

F. 202T Data Sets and Remote Video Display Terminal Connections

3.12 One 202T data set (or equivalent) must be used at the 11V03 minicomputer end and another at the terminal end when the cable distance between the 11V03 minicomputer and terminal exceeds 304.8m (1000 ft) (Fig. 1). The data set operates at 1200 baud in full duplex mode. Terminals between 91.4m (300 ft) and 304.8m (1000 ft) from the computer must operate at 1200 baud because of high frequency loss and phase delay but do not require the 202T data sets. Only one terminal in the system can operate at 1200 baud as there is only one port optioned for that speed.

G. Prentice Electronics Corp Asynchronous Line Drivers (ALDs)

3.13 One ALD (or equivalent) is used at the mini-computer and one at the PBX when the distance between the minicomputer and the PBX is greater than 22.9m (75 ft). The ALD operates at 1200 baud and in full duplex mode.

H. 2565HKM Telephone Set

3.14 This telephone set (or an equivalent) is used with a 212AR data set for a dial-up maintenance loop arrangement. One 2565HKM is used at each end of the data link between the remote terminal at the maintenance center and the computer (Fig. 1).

4. COMMUNICATION BETWEEN PBX AND PRO 150

4.01 The PRO 150 communicates with the PBX via a data link. This communication is 2-way. The PBX sends call processing information to the PRO 150, and the PRO 150 sends requests to the PBX for changing the manner of call processing.

4.02 The PRO 150 receives three types of information from the PBX. One type is a state change log which is a stream of messages that describe the call-handling events. The second type is translation data which allows the PRO 150 to relate the state change log information to a set of fixed reports. The third type includes replies to reconfiguration requests.

4.03 The PRO 150 communicates with the PBX by using the data link in the reverse channel (revchan) direction. Using revchan, the PRO 150 requests the time of day (tod), requests translations data, and sends reconfiguration requests.

5. SYSTEM CONFIGURATION

5.01 Information is collected by the PRO 150 about call-handling events, call-handling facilities, agent groups, and queues; the structure of the information is explained below. The user interface is structured into several levels; the purpose of each level is explained below.

INFORMATION STRUCTURE

A. Functional Agent Reporting Group

5.02 This group consists of all the agents currently assigned to a particular split. A split provides one designated function, such as airline reservations. Another split would have a different function, such as maintenance. There may be eight splits (one of which is reserved for system maintenance). Whenever the contents of a split are altered by reorganization, the makeup of the appropriate functional groups will automatically change in the PRO 150 data base.

B. Informational Agent Reporting Group

5.03 The user may collect data on a selected group of agents and/or individual agents. This group of agents is called an informational agent reporting group, hereafter referred to as a reporting group. A reporting group could be a group of agents reporting to a particular supervisor. A reporting group may contain from one to the total number of agents in the system with changes made at any time by the user. An agent can only belong to one split and one reporting group. A reporting group may include a few agents in one split or agents in several splits depending on system configuration. System reports automatically reflect any changes to reporting groups. To display reports on a reporting group, each reporting group must be assigned an identification number. There are 30 numbers (1 through 30) available. These numbers can be assigned to reporting groups or to individual agents. A number may not be assigned to both an agent and a group simultaneously. If 5 numbers (eg, 1, 2, 3, 4, 5) are assigned to reporting groups, the remaining 25 numbers (6, 7,..... 30) can be assigned to individual agents. The system provides commands for the user to determine the reporting group and agent assignments and also a command to list the numbers available for assignment.

C. Individual Agents

5.04 Information can be collected on individual agents to monitor performance; for example, agents in training. Any number from 1 through 30 not used by a reporting group or another individual agent may be assigned to an individual agent. An agent can belong to only one split and one reporting group at a time.

D. Trunk Group

5.05 A trunk group is a collection of facilities which carry calls to and from the DIMENSION PBX. A trunk group contains only trunks of the same type which have the same originating point. A

trunk group may contain from one to the maximum number of trunks (255). The PRO 150 is capable of handling 60 trunk groups maximum. Whenever a group of facilities is changed, via service order, the trunk group reports will automatically change. Thresholds can be set to cause inflow/outflow between splits (intraflow) when more calls are waiting for service than a user specified number.

E. Queue

5.06 Each split contains one queue. This queue holds the incoming calls waiting to be answered. Information is collected on these calls and is used to build reports and forecasts.

5.07 Priority calling, intraflow, and interflow call handling are supported by the DIMENSION PBX.

USER INTERFACE STRUCTURE

A. Customer Information System (cis) Level

5.08 This cis level is the entry level and provides access to the other seven levels. (See Fig. 2.) Passwords may be assigned or changed from this level, and each level may be assigned a unique password to limit access to authorized persons. Helpful explanations of available commands, parameters, and legal parameter values are displayed by typing **?, ??,** or **c,** respectively, at this level and each of the other seven levels.
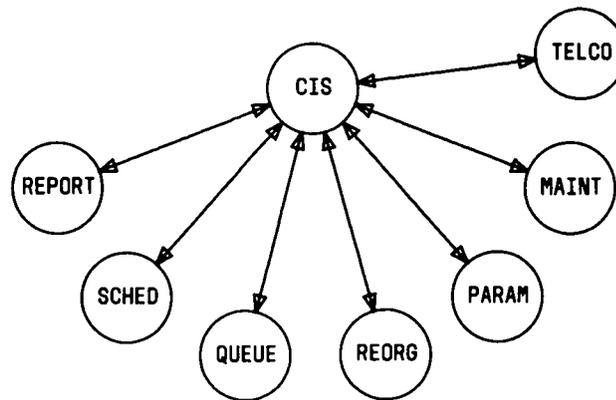
Fig. 2—Level Structure

B. report Command and Level

5.09 The **report** command is used to enter the report level. Commands within the report level permit display of agent status, split performance, call profile, trunk status, and forecast reports. Black and white reports may be displayed on any system terminal or printed on the line printer. Color reports may be displayed only on a color terminal. The black and white reports may also be scheduled for automatic daily output which causes that report to be

printed daily at the scheduled time. There can only be one scheduled time to print all reports scheduled for daily output. This level may be password protected. Each report has a command which calls the report up to a terminal (Tables A and B). Various parameters permit selection of applicable group, agent, split, etc. See Part 6 for parameter definitons. The acronym associated with the report name is also the command used to initiate the report (for example, agss). Hence, the command and report name are both included in the following paragraph headings

TABLE A

BLACK AND WHITE REPORTS

COMMAND	PARAMETERS
agss	(GROUPS) (OUT);
dags	(GROUP) (WDAY) (EHT) (OUT) (DAY);
das	(AGENT) (WDAY) (EHT) (OUT) (DAY);
dbhs	(TRGROUPS) (WDAY) (OUT) (DAY);
dcp	(SPLIT) (WDAY) (OUT) (DAY);
dss	(SPLIT) (WDAY) (OUT) (DAY);
dtgs	(TRGROUP) (WDAY) (OUT) (DAY);
hhags	(GROUPS) (TIME) (EHT) (OUT) (DAY);
hhss	(TIME) (OUT) (DAY);
htgs	(TRGROUPS) (TIME) (OUT) (DAY);
idf	(SPLIT) (GROUP) (WTS) (OUT);
ltf	(SPLIT) (DATE) (WDAY) (GROW) (WTS) (OUT);
sp	(OUT);

TABLE B

COLOR REPORTS

COMMAND	PARAMETERS
aap	(SPLIT) (MAXDELAY);
tpfa	(SPLIT) (FROM) (GROW) (MAXCALLS) (DAY) (WTS);
tvp	(SPLIT) (MAXCALLS) (DAY);
wcvp	(SPLIT) (MAXEHT) (DAY);

5.10 The following reports provide information on individual agents or groups of agents (by reporting group):

agss Command (Agent Group Status Summary Report)

5.11 The **agss** command causes a report of agent status by displaying overall conditions of all the reporting groups (Fig. 3). This permits group comparison of the agent availability and activity in each group and a summary of all activity.

hhags Command (Half-Hour Agent Group Summary Report)

5.12 The **hhags** command causes a report of overall performance by reporting groups. The report indicates the number of calls, average time per call,

number of agents on duty, percent occupancy, and an efficiency rating for each reporting group (Fig. 3). Efficiency of over 100 percent indicates performance exceeding goals.

dags Command (Daily Agent Group Summary Report)

5.13 The **dags** command causes a report of traffic patterns, by half-hour intervals, over an entire day for a reporting group. This report provides the same parameters as the Half-Hour Agent Group Summary and is useful for checking one group performance against another.

AGENT GROUP STATUS SUMMARY

0810 MON 3 MAY 82

REPORT GROUP	IDLE AND AVAIL	ACD CALL	AFTER CALL WORK	EXT IN	EXT OUT	AUX WORK	TOTAL
1	0	14	6	3	2	0	25
2	0	7	9	6	2	0	24
3	0	5	5	9	6	0	25
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
18	0	12	6	2	2	3	25
SUMMARY	0	61	31	26	26	6	150

HALF HOUR AGENT GROUP SUMMARY

1130-1200   MON 3 MAY 82

REPORT GROUP	NO. CALL HNDL	AVG TALK TIME IN	AVG AFTER CALL WORK	% AUX WORK	NO. OUT CALL	AVG TALK TIME OUT	AVG POS MAN	% OCC	EFF
1	120	150	98	0	5	130	18	90	75
2	60	180	160	2	1	220	10	87	54
.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.
22	400	199	96	0	0	0	68	89	63

Fig. 3—Agent Group Status and Half-Hour Agent Group Summary Reports

das Command (Daily Agent Summary Report)

5.14   The **das** command causes a report of individual agent performance in half-hour intervals for an entire day. Agents must be assigned to reporting groups before the report is generated. The report allows a supervisor to know the total time the positions were manned and time (in seconds) for various call-handling activity during that report period (Fig. 4).

```
                        DAILY AGENT SUMMARY
    AGENT 3                                              MON 3 MAY 82

                   AVG   AVG                      AVG
             NO.   TALK  AFTER   %       NO.      TALK   TOTAL
             CALL  TIME  CALL    AUX     OUT      TIME   TIME    %
    TIME     HNDL  IN    WORK    WORK    CALL     OUT    MAN     OCC    EFF
    ----     ----  ----  ----    ---     ----     ---    ---     ---    ---
    0800-0830  5    181    68      0       1       115   1800     76    100
    0830-0900  4    179    49      0       2        93   1800     61    109
    0900-0930  4    189    57      0       1       150   1800     63    101
        .      .     .     .       .       .        .      .      .      .
        .      .     .     .       .       .        .      .      .      .
        .      .     .     .       .       .        .      .      .      .
    1430-1500  7    165    45      0       0         0   1800     82    119
    1500-1530  8    180    39     10       1       110   1620     97    113
    1530-1600  7    173    71      5       0         0   1710     95    102
    ----------------------------------------------------------------
    SUMMARY   44    172    55     15      21        91  13450     79    110
```

Fig. 4—Daily Agent Summary Report

5.15   The following reports provide information on splits:

sp Command (Split Performance Report)

5.16   The **sp** command causes a display of information on all the splits and is the only black and white report which is updated while displayed. The report provides traffic, delay times, and number of agents on a split basis (Fig. 5). The average speed of answer (AVG SPEED ANS) and percent occupancy (% OCC) are summary data, calculated as a series of exponentially smoothed 1-minute averages. The number of calls handled and abandoned are 1-minute totals. The other information represents a snapshot of the split status taken every minute. This report automatically updates every minute when routed to a terminal. When this report is routed to the printer, it will only be printed once unless requested again.

SPLIT PERFORMANCE

1022 MON 3 MAY 82

SPLIT	NO. CALL WAIT	OLD CALL WAIT	IDLE AND AVAIL	AFTER CALL WORK	AUX WORK	NO. OUT CALL	NO. POS MAN	AVG SPEED ANS	% OCC	NO. CALL HNDL	NO. CALL ABAN
1	0	0	0	0	0	0	0	0	0	0	0
2	10	42	0	0	0	27	104	22	89	420	30
3	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.	.	.
8	5	18	1	1	0	5	10	17	85	92	9

DAILY SPLIT SUMMARY

SPLIT 2

MON 3 MAY 82

TIME	AVG SPEED ANS	NO. CALL HNDL	NO. CALL ABAN	AVG TALK TIME IN	AVG AFTER CALL WORK	% AUX WORK	NO. OUT CALL	AVG TALK TIME OUT	AVG POS MAN	AVG POS REQ	NO. QUE OVFL	% OCC	EFF
0000-0030	0	1	0	152	23	0	0	0	1	1	0	5	143
0030-0100	0	1	0	233	15	0	1	180	1	1	0	7	101
0100-0130	0	2	0	375	200	2	1	90	1	1	0	9	44
0130-0200	0	1	0	150	36	0	0	0	1	1	0	5	134
.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.
1630-1700	7	119	3	170	65	0	14	210	17	18	1	49	106
1700-1730	17	4	1	86	14	0	0	0	2	3	2	46	31
1730-1800	12	77	1	168	66	0	0	0	11	13	2	30	107
SUMMARY	5	1409	19	163	69	12	156	200	242	270	28	42	108

Fig. 5—Split Performance and Daily Split Summary Reports

dss Command (Daily Split Summary Report)

5.17 The **dss** command causes a report of the operation of a particular split. The report supplies summarized statistics on calls and call delays as well as calculated statistics relating to occupancy rates and number of agents required to handle the load during the previous day in half-hour increments.

5.18 This report depicts traffic patterns for the split as well as supplying data relative to the average delay in answering incoming calls. It also provides calculated statistics relative to average talking times, after call work (ACW) times, occupancy rates, number of out calls made, number of agents that were on duty to handle calls, and the number of agents that should have been on duty to meet the customer predefined speed of answer (Fig. 5).

5.19 This report also provides an efficiency rating for each half-hour period of the report. From this information a supervisor can determine how well all the agents in a split are meeting the standard (customer designated) for handling a call. The standard includes both talking time as well as ACW time. The report indicates peak-period usage and trends occurring during a day.

hhss Command (Half-Hour System Summary Report)

5.20 The **hhss** command causes a report of all the individual splits within the system on a half-hour basis. This report is the primary administrative tool to monitor system operation. It supplies summarized statistics of call volumes and incoming call delays as well as calculated statistics relating to occupancy rates and number of agents that were required to handle the workload received during the previous half hour (Fig. 6).

HALF HOUR SYSTEM SUMMARY

1130-1200   MON 3 MAY 82

SPLIT	AVG SPEED ANS	NO. CALL HNDL	NO. CALL ABAN	AVG TALK TIME IN	AVG AFTER CALL WORK	% AUX WORK	NO. OUT CALL	AVG TALK TIME OUT	AVG POS MAN	AVG POS REQ	QUE OVFL	% OCC	EFF
1	6	1000	22	157	100	0	55	180	101	96	1	92	97
.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.
8	32	180	8	185	134	0	7	204	31	39	3	98	98
SUMMARY	10	1180	30	161	120	0	62	183	150	139	4	93	94

Fig. 6—Half-Hour System Summary Report

dcp Command (Daily Call Profile Report)

5.21 The **dcp** command causes a report of the delay in answering calls and how many calls were abandoned in each time period. Abandoned calls are an indication of customer tolerance to delay by split (Fig. 7). This report can also indicate subtle trunk group problems. For example, if there was a high percentage of abandoned calls in the 0- to 3-second range, it could be an indication that a trunk is dropping calls.

```
                       DAILY CALL PROFILE
    SPLIT   2 (0900-1000)                        MON 3 MAY 82

    DELAY
    (SEC)  0  2  4  6  8  10  12  14  16  18  20  22  24  26  28  30 >30
    -------------------------------------------------------------------
    %ABN   0  0  0  5  10  15  25  15  10  10   5   5   0   0   0   0

    %ANS  25 15 10 10 10   5   5   5   5   5   5   0   0   0   0   0
```

Fig. 7—Daily Call Profile Report

aap Command (Average Answer Profile Report)

5.22 The **aap** command causes a color report in barchart format. The aap report gives the customer the average delay in seconds of calls waiting, per split, in 5-minute intervals for the most recent 5 hours. The colors used in this report depict an average answer performance in relation to a customer-defined objective answer range. Parameters "upper" and "lower" entered in the param level, explained later, define the upper and lower limits of the customer answer objective. Yellow indicates that the average answer performance is significantly better than the objective which could mean there are more agents than needed for the number of incoming calls. Green indicates that the average answer performance is within its objective range. Red indicates that the objective average answer range has been exceeded, and more agents may be needed for incoming calls. The upper and lower limits are displayed on either side of a small green square at the upper right corner of the display (Fig. 8). This report updates every 5 minutes when displayed.

Fig. 8—Average Answer Profile Report

tvp Command (Traffic Volume Profile Report)

5.23 The **tvp** command causes a color report depicting the number of calls handled and abandoned in a split for an entire day by half-hour intervals (Fig. 9). The number of calls handled (NCH) is the number of calls answered (displayed in green). The number of calls abandoned (NCA) is displayed in red. The number of calls carried (NCC) is then obtained by adding NCH and NCA. The report is displayed on the color terminal.
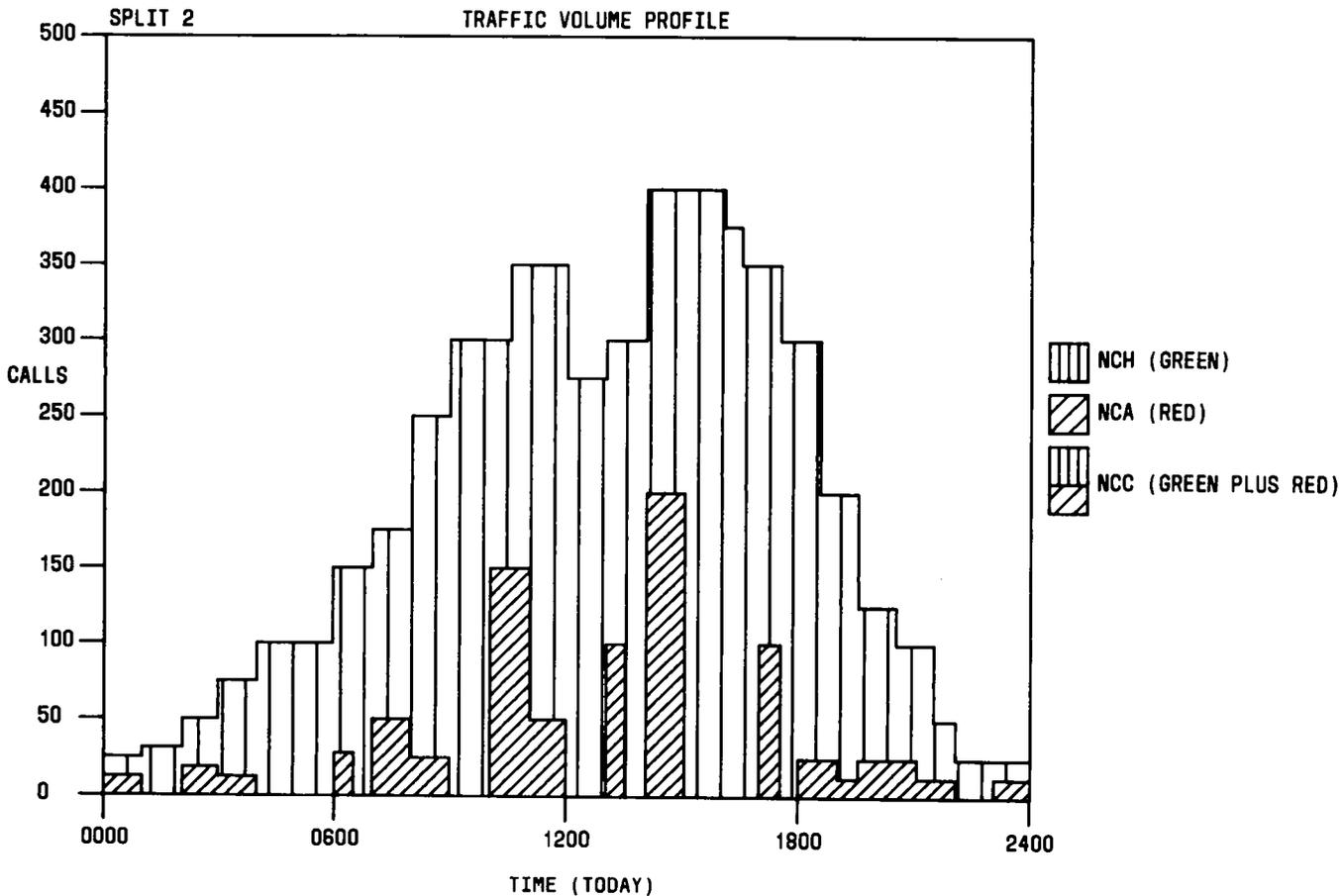
Fig. 9—Traffic Volume Profile Report

wcvp Command (Weighted Call Value Profile Report)

5.24 The **wcvp** command causes a color report depicting the weighted call value (WCV) which is the average time to handle an incoming call for an entire day, by half-hour intervals, for a split. This time includes talk time and ACW time. The solid black line is the WCV desired by the customer (Fig. 10). The green area indicates that the WCV was less than or equal to the designated WCV, and the red area indicates that the WCV was greater than the designated WCV. The report is displayed on the color terminal.

Fig. 10—WCV Profile Report

htgs Command (Hourly Trunk Group Summary Report)

5.25 The **htgs** command causes a report which indicates loading on various trunk groups (Fig. 11) and records grade of service and call volumes.

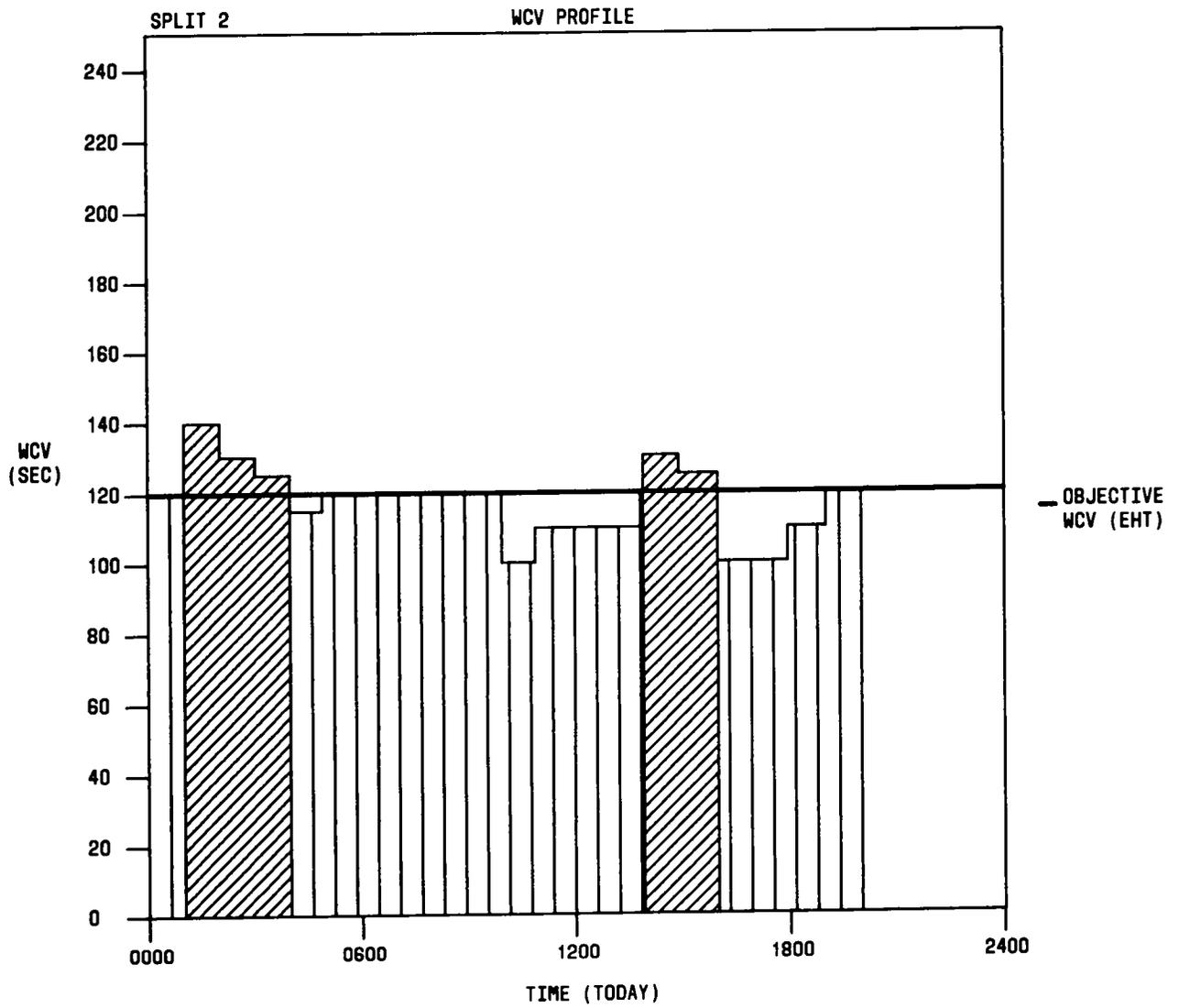**dtgs Command (Daily Trunk Group Summary Report)**

5.26 The **dtgs** command causes a report containing the same information as the hourly trunk group summary for every hour of the day. The report consists of one trunk group per page with data updated every hour.

HOURLY TRUNK GROUP SUMMARY

1200-1300   MON 3 MAY 82

| | -------- INCOMING --------- | | | | | ----- OUTGOING ----- | | | | --- TOTAL --- | |
TRK GRP	NO. CALL HNDL	NO. CALL ABAN	AVG HOLD TIME	NO. OVFL	CCS	NO. OUT CALL	AVG HOLD TIME	NO. OVFL	CCS	% OCC	%ALL TRK BUSY	NO. TRK
T1	100	1	155	0	155	80	190	0	152	89	67	10
T2	110	0	150	0	165	5	200	0	10	69	22	7
S1	97	3	180	0	175					32	10	15
S2	100	11	178	0	178					78	23	6
T7	79	1	165	0	130	1	104		0	95	80	4

Fig. 11—Hourly Trunk Group Summary Report

dbhs Command (Daily Trunk Group Busy Hour Summary Report)

5.27 The **dbhs** command causes a report containing the same information as the hourly trunk group summary except this data is calculated for the busiest hour of that day. The significance of this report is to plan the trunking needs of the ACD center by showing under- and over-utilized trunk groups.

5.28 The following reports provide forecast information.

5.29 These reports predict the number of positions required (NO. POS REQ) and the forecasted calls carried (FCC). A forecast report is made for each split. Traffic information is obtained from a forecast data base.

5.30 The split forecast is calculated by averaging the NCC every half-hour using a customer-designated weighting factor for each week using the same day of the week for the past 3 weeks. Usually the most recent week is weighed heavier. One study suggested that a weighting factor of 6 for the most recent week, 3 for the second past week, and 1 for the third past week gave the most accurate forecast.

5.31 In addition to calculating a weighted average of recent traffic, a long-term or seasonal correction factor may be applied to this average to more accurately predict traffic. This factor uses weekly traffic data from the same 3-week period of last year (52 weeks before the forecast date). The previous year data adjusts the weighted average up or down as needed by using an algorithm based on the trend from last year. The long-term correction factor is used only for the long-term forecast report.

idf Command (Intraday Forecast Report)

5.32 The **idf** command causes a report reflecting staffing needs due to a predicted number of incoming calls. This report is based on incoming traffic up to the time of the forecast and provides forecasts for each half-hour period for the next 8 hours (Fig. 12).

INTRADAY FORECAST

TIME	NO. FCST CALL	NO. POS REQ	% OCC
SPLIT 2	WED 3 JAN 79		
1600-1630	201	28	79
1630-1700	211	29	80
1700-1730	216	29	82
1730-1800	204	28	80
1800-1830	201	28	79
1830-1900	175	25	77
1900-1930	192	27	79
1930-2000	177	25	78
2000-2030	216	29	82
2030-2100	199	28	78
2100-2130	211	29	78
2130-2200	184	26	78
2200-2230	222	30	82
2230-2300	216	29	82
2300-2330	199	28	78
2330-2400	201	28	79
SUMMARY	3225	446	80

NUMBER OF TRUNKS: 41
OBJ ASA: 10 SEC
OBJ EHT: 200 SEC
GROWTH FACTOR: 100%

Fig. 12—Intraday Forecast Report

5.33 This forecast uses a correction factor that is based on the traffic for the preceding 8 hours divided by the total number of calls forecasted for that 8 hours. The customer may use the predefined values in the system or input other values for the split, objective answer delay, expected holding time, weekly weighting factors, routing, and growth factor. The split is the split the report is prepared for. The objective answer delay is the customer-selected call answering delay. The expected holding time is the answering delay plus the average talk time. The weighting factors assign a weight to each week used as the basis for the forecast. This weight is used in calculating the weighted average. Routing specifies the output device. The growth factor allows a cus-

tomer to compensate for an increase in business or traffic.

ltf Command (Long-Term Forecast Report)

5.34 The **ltf** command causes a report which enables a supervisor to schedule agents on a split basis for each day (Fig. 13). The report first forecasts incoming call volumes by split and then translates these half-hour call volumes into agent requirements.

LONGTERM FORECAST

				FORECASTED FROM:	28 DEC 78
					21 DEC 78
SPLIT 2		THU 4 JAN 79			14 DEC 78
				WEIGHTING FACTORS:	6, 3, 1
	NO.	NO.		GROWTH FACTOR:	100%
	FCST	POS	%	OBJ ASA:	10 SEC
TIME	CALL	REQ	OCC	OBJ EHT:	200 SEC
				NUMBER OF TRUNKS:	41
				SEASONAL FACTOR:	100%

TIME	NO. FCST CALL	NO. POS REQ	% OCC
0000-0030	26	7	41
0030-0100	12	5	26
0100-0130	5	3	18
.	.	.	.
.	.	.	.
.	.	.	.
0800-0830	325	36	100
0830-0900	290	34	94
0900-0930	354	38	100
0930-1000	311	36	95
.	.	.	.
.	.	.	.
1400-1430	285	34	93
1430-1500	248	32	86
1500-1530	273	33	91
1530-1600	252	32	87
.	.	.	.
.	.	.	.
2230-2300	119	18	73
2300-2330	65	12	60
2330-2400	49	10	88
SUMMARY	9184	1154	88

Fig. 13—Long-Term Forecast Report

5.35 The customer may use the predefined values in the PRO 150 or input other values for the split, forecast date(s), weighting factors, EHT (expected holding time), objective answer delay, number of serving trunks (on that split), and a growth factor. The split is the split the report is prepared for. The date is the date, week, and month the forecast is prepared for, and the weighting factor is the weekly weighting factor. The date can be specified as some future date the forecast report is to start on. The forecast will be prepared for that day and the same day of the week for the following 2 weeks (eg, if Wednesday is the day the forecast is to be prepared for, the forecast will include the next three Wednesdays). The EHT is the answering delay plus the talk time. The WCV is the total time (includes both talk time and ACW time) an agent should spend on a call. The objective answer delay is the customer-selected call answering delay. Number of serving trunks and the EHT determine the maximum number of calls that can be received. The growth factor allows a customer to compensate for an increase in business or traffic.

tpfa Command (Traffic Profile—Forecast/Actual Report)

5.36   The **tpfa** command causes a report which plots the forecasted traffic against the actual traf-fic volume for the entire day by half-hour intervals for any (one) split (Fig. 14). The solid black line indicates the forecast, and the green area indicates the actual traffic volume. The report is displayed on the color terminal.
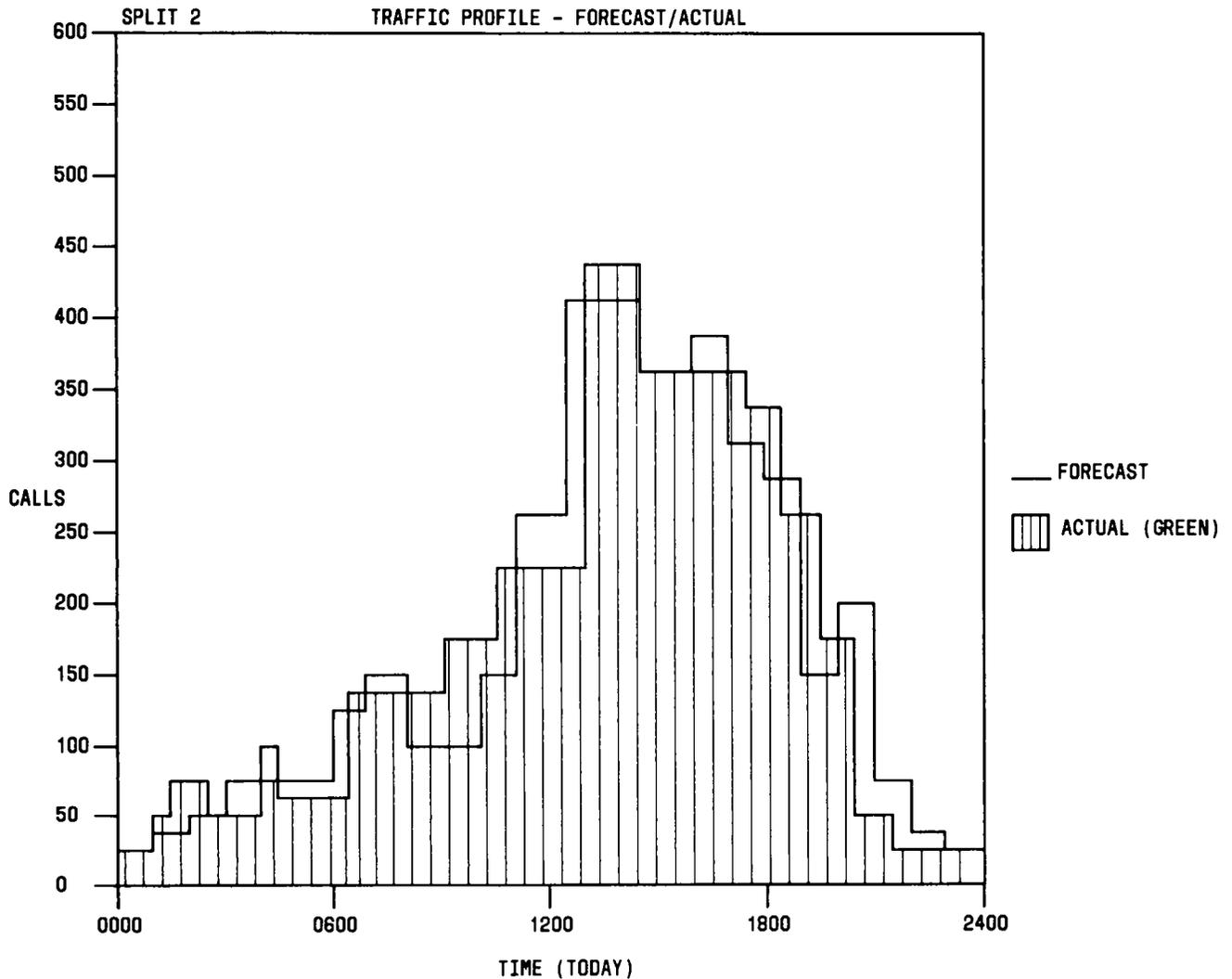

Fig. 14—Traffic Profile—Forecast/Actual Report

C.   queue Command and Level

5.37   The **queue** command is used to enter the queue level. Commands within the queue level permit changing ACD traffic flow by changing night directory numbers and thresholds for inflow and out-flow traffic from splits. Queue level commands and parameters are shown in Table C. Calls which intraflow between splits should be put into a priority queue for quick answering. Calls which interflow (be-tween PBXs) should also receive priority treatment. Queuing priority is administered at the PBX so that inflowing calls do not have to wait for a long time in a second queue.

TABLE C

QUEUE LEVEL COMMANDS AND PARAMETERS

COMMAND	PARAMETERS
cdn	(BASE) (REMOTE);
clt	(QDN) (THRES);
cpo	(QDN) (THRES);
lqp	(OUT);
rdn	(BASE);

5.38 The queue level may be password protected and provides the following:

cdn Command (Change Night Service Directory Number)

5.39 The **cdn** command changes the routing of night calls, using the call forwarding features of the PBX. Calls can be routed to a different console, split, or location which can be reached by a 7-digit directory number. This command permits the most flexible night service.

cit Command (Change Inflow Threshold)

5.40 The **cit** command sets a threshold, a number of waiting calls, above which inflow will not be permitted. Below the threshold, the split can assist in answering calls which inflow from another split that has too many calls waiting. The inflow threshold must be less than the primary outflow threshold.

cpo Command (Change Primary Outflow)

5.41 The **cpo** command sets a threshold, a number of waiting calls, above which outflow can occur (if permitted by another split's inflow threshold). The outflow threshold must be greater than the inflow threshold.

lqp Command (List Queue Parameters)

5.42 The **lqp** command lists the parameters associated with the queues. These are split number, expected holding time, delay increment (in the daily call profile report), number of trunks, upper and lower answer speed objectives, and average speed of answer objective.

rdn Command (Restore Base Night Service Directory Number)

5.43 The **rdn** command restores the original base night directory number to service by cancelling the forwarding of calls in the PBX.

D. reorg Command and Level (Reorganization Level)

5.44 The **reorg** command is used to enter the reorg level. Commands within the reorg level permit reorganization of splits and reporting groups for more efficient call-handling and better system efficiency. The reorg level commands and parameters are shown in Table D. This level may be password protected. The reorg level permits the following:

TABLE D

REORG LEVEL COMMANDS AND PARAMETERS

COMMAND	PARAMETERS
ad	(GROUP) (EXTS);
ag	(AGENTS) (OUT);
as	(AGENT) (EXT);
av	
clag	(AGENTS);
clgr	(GROUPS);
d	(GROUPS) (EXTS);
dei	(EXTS) (OUT);
gr	(GROUPS) (OUT);
lsp	(LCP);
mts	(EXTS) (SPLIT);
sp	(SPLITS) (OUT);
ssp	(LCP) (SPLITS) (OUT);

ad Command (Add Extensions to Report Groups)

5.45 The **ad** command permits agent extension numbers to be added or moved to a reporting group. The command removes extensions from the prior report group. If extensions are moved to a non-existent reporting group, a new group is created.

ag Command (Run Extension to Agent Assignment Report)

5.46 The **ag** command causes a display of each agent extension and the corresponding agent identification number in order by agent number.

as Command (Assign Agent Identification Number to Extension)

5.47 The **as** command permits individual agent identification numbers to be assigned to extension numbers to collect data for agent-type reports. If the agent was previously assigned a number, the reports collect data for the previous assignment until the move and after the move collect data on the current assignment.

av Command (List Numbers Available for Agent or Group Identification)

5.48 The **av** command lists the numbers (1 through 30) that have not been assigned to agents or reporting groups.

clag Command (Clear Agent Identification Number)

5.49 The **clag** command eliminates the agent identification number for the specified agent(s) and adds the number(s) deleted to the list of available numbers.

clgr Command (Clear Report Group Identification Number)

5.50 The **clgr** command eliminates a reporting group and adds the number of the group to the list of available numbers.

d Command (Delete Extension From Report Group)

5.51 The **d** command removes an extension from the presently assigned reporting group.

dei Command (Display Extension Information)

5.52 The **dei** command displays the extension, split, reporting group, and agent identification number for all or specified extensions.

gr Command (Run Group Assignment Report)

5.53 The **gr** command displays extension to reporting group assignments for all or specified reporting groups (Fig. 15).

```
              EXTENSION TO REPORT GROUP ASSIGNMENT
                                           0800 MON 3 MAY 82

        GROUP 1
        -------
        1000 .   1001    1002    1003    1004
        2000     2001    2002    2003

        GROUP 2
        -------
        3000     3001    3002    3003    3004
        4000     4001    4002    4003    4004

        GROUP 3
        -------
        5000     5001    5002    5003    5004
        6000     6001    6002    6003    6004

        GROUP 4
        -------
        7000     7001    7002    7003    7004
```

Fig. 15—Extension to Report Group Assignment Report

isp Command (Invoke Split Pattern)

5.54 Only one preset split pattern [Load Control Package (LCP) 0] is available in the PBX. The **isp** command cannot be used even though the command is listed (Table D).

mts Command (Move Terminal to Split)

5.55 The **mts** command permits an extension or block of extensions to be moved to a different split. This command facilitates traffic flow by moving agents to needed areas. Only extensions which are in the "unstaffed" state can be moved to another split.

sp Command (Run Split Assignment Report)

5.56 The **sp** command provides a listing of current extension to split assignments. This report includes all specified splits (Fig. 16).

EXTENSION TO SPLIT ASSIGNMENT

0800 MON 3 MAY 82

```
SPLIT 2
-------
1000    1001    1002    1003    1004    1005    1006
2000    2001    2002    2003    2004    2005    2006

SPLIT 3
-------
3000    3001    3002    3003    3004    3005
4000    4001

SPLIT 4
-------
4002    4003    4004    4005    4006    4007
5000    5001    5002    5003

SPLIT 5
-------
5004    5005    5006

SPLIT 6
-------
5007
6000    6001    6002    6003    6004    6005    6006    6007
7000    7001

SPLIT 7
-------

SPLIT 8
-------
```

Fig. 16—Extension to Split Assignment Report

ssp Command (Show Split Pattern)

5.57 The **ssp** command causes a report containing the extension to split assignments. It is essentially the same as the **sp** command.

E.   sched Command and Level (Schedule Level)

5.58 The **sched** command is used to enter the sched level. Commands within the sched level permit the user to schedule and enable or disable the printing of scheduled reports. Commands and parameters are shown in Table E. This level also provides a listing of the schedule and permits entries to be removed from the schedule. (Reports are added to the schedule only in the report level.) This level may be password protected and provides the following:

list Command (List Schedule of Reports)

5.59 The **list** command causes a numbered listing of scheduled reports, the associated level, and specified parameters for each entry on the schedule.

rm Command (Remove Entries from Schedule)

5.60 The **rm** command permits the removal of any or all entries from the schedule.

disable Command (Disable Schedule)

5.61 The **disable** command prevents the scheduled reports from being printed. The schedule is terminated immediately after entering this command and remains in effect until the enable command is entered.

enable Command (Enable Schedule)

5.62 The **enable** command allows the scheduled reports to be printed at the time designated with the enable command. The scheduled reports will be printed every day until disabled.

TABLE E

SCHED LEVEL COMMANDS AND PARAMETERS

COMMAND	PARAMETERS
disable	(NONE)
enable	(TIME);
list	(OUT);
rm	(ENTRIES);

F.   param Command and Level (Parameter Level)

5.63 The **param** command is used to enter the param level. Commands within the param level permit a change in the default values for command and split parameters. The param level commands and parameters are shown in Table F. In addition to the parameters shown, split parameters and parameters at other levels (Tables A, B, C, D, and G) can be affected by the param level commands. See Part 6 for definitions and calculations of parameters. This level may be password protected and permits the following:

list Command (List Parameters)

5.64 The **list** command displays the preset or default values for command parameters.

preset Command (Preset Parameters)

5.65 The **preset** command permits command parameters to be preset and changed. All parameters displayed by the list command may be changed by the preset command.

splist Command (List Split Parameters)

5.66 The **splist** command lists the preset or default values for split parameters by split.

spset Command (Set Split Parameters)

5.67 The **spset** command permits split parameters to be changed. All parameters displayed by the **splist** command may be changed by this command.

TABLE F

PARAM LEVEL COMMANDS AND PARAMETERS

COMMAND	PARAMETERS
list	(OUT);
preset	(PNAME) (VALUE);
splist	(OUT);
spset	(SPLITS) (SPNAME) (VALUE);

G. maint Command and Level (Maintenance Level)

5.68 The **maint** command is used to enter the maint level. Commands within the maint level permit maintenance functions to be performed and may be password protected. Commands and parameters are listed in Table G and explained below.

clock Command

5.69 The **clock** command permits the system clock to be manually set at a time different than the PBX.

time Command

5.70 In normal operation the PRO 150 requests the time-of-day message from the PBX at startup or restart. The system clock is then set to match the time received from the PBX. The **time** command forces the PRO 150 to request time-of-day data and reset the system clock without restarting.

log Command (Print Log of System Errors or Transactions)

5.71 The **log** command permits the user to display the most recent system changes or errors. The most recent events in the log are displayed on request at a terminal. A more extensive log can be sent to the printer. Errors are printed in 3 letter codes explained in Trouble Locating Manual, TLM-65220.

newsys Command (New System Software)

5.72 The **newsys** command permits a new version of the system software to be installed if and when it becomes necessary.

rpd Command (Replace Diskette)

5.73 The **rpd** command permits diskettes to be replaced when needed. The need for a diskette replacement may be indicated at all terminals and the line printer by error messages such as **%FLOPPY DISKETTES DO NOT AGREE**. One of the two diskettes is replaced on a scheduled basis at two-month intervals.

trans Command (Request Translations)

5.74 The **trans** command permits the PBX translations to be requested at any time. All system translations are requested when this command is issued.

distr Command (Disable Automatic Translation Request)

5.75 The **distr** command manually disables the automatic translation requests transmitted to the PBX by the PRO 150.

entr Command (Enable Automatic Translation Request)

5.76 The **entr** command enables the PRO 150 to request translations from the PBX on the normally scheduled basis.

syn Command (List Synopsis of Events)

5.77   The **syn** command displays a system synopsis (Fig. 17). Synopsis items are explained below.

- Displays software version number.

- Displays current date and time stored in the system.

- Displays whether daylight saving time is observed/not observed.

- Displays whether translations are enabled or disabled.

- Displays whether the time and date will be automatically requested from the PBX after a PRO 150 restart.

- Displays whether the system will halt (or continue) after serious errors.

- Displays whether the schedule is enabled or disabled for printing reports and commands.

- Displays the read and write status of each floppy diskette.

hht Command (Display Half-Hour Traffic)

5.78   The **hht** command permits the user to display the half-hour traffic data for the past 7 weeks. Only part of the traffic can be displayed at one time. However, the data can also be sent to the printer. The traffic data would be used to prepare a forecast report.

wkt Command (Display Weekly Traffic)

5.79   The **wkt** command permits the user to display the weekly traffic for the past 60 weeks or sends the data to the printer. This traffic is used as the basis for preparing a long-term forecast or a traffic profile report. If the traffic that is to be used in preparing the forecast is out of range, the data can be omitted and not used to calculate the reports.

H.   teleco Command and Level (Telephone Company Level)

5.80   The **telco** command is used to enter the telco level. Commands within the telco level are accessed only by telephone company repair or installation persons. The system comes with a default password of "cis". A new password can be assigned (in the cis level) to protect the telco level. Commands and parameters are listed in Fig. 18 and explained in the following paragraphs.

TABLE G

BLACK AND WHITE REPORTS

COMMAND	PARAMETERS
clock	(M/D/Y) (TIME);
distr	
entr	(TIME);
hht	(M/D/Y) (WDAY) (OUT);
log	(UPDATE) (OUT);
newsys	
rpd	
syn	(OUT);
time	
trans	
wkt	(M/D/Y) (NWEEKS) (OUT);

```
12A CIS version (  )
Date and time: FRI 27 APR 79 1803
(Daylight saving time is observed.)
Scheduled commands will execute:SAT 28 APR 79 0810
Automatic ESS translation is disabled.
The time and date will be requested from ESS at restart.
The system will halt after serious errors.
Floppy drive 0: enabled for read, enabled for write.
Floppy drive 1: enabled for read, enabled for write.
```

Fig. 17—Display of System Synopsis

```
cis>> telco
Password:


telco>> ?


        TELCO COMMAND    DESCRIPTION
        -------------    -----------
        crt              request system to identify this crt terminal
        dst              decide whether to observe daylight saving time
        halt             decide whether to halt or restart after system error
        hertz            select system line frequency
        ldf              load floppy disk from external source
        peek             examine contents of memory locations
        sa               audit the system stacks
        sai              write "background" word into system stacks
        syn              show synopsis of time and restart settings
        tmreq            decide whether to request time and date at restart
        trans            request translation from ESS

        c                list the above commands
        #                leave this prompt level, returning to cis>>
telco>> c
   crt
   dst      (FLAG) ◄——————  "ON" = OBSERVE DST
   halt     (FLAG)
   hertz    (FLAG) ◄——————  "ON" = 50 HERTZ
   ldf
   peek
   sa       crt
   sai
   syn      crt
   tmreq    (FLAG)
   trans        ╲___╱
                  │
telco>>        PARAMETERS
```

Fig. 18—Telco Level Commands and Parameters—As Printed on Display Terminal Screen

---

trans Command (Translations Request)

5.91 The **trans** command permits the PBX translations to be requested either in part or in entirety (by making one or more choices, below). The command displays the following menu to choose from:

- **e**   EXTENSIONS

- **q**   QUEUES

- **t**   TRUNK GROUPS

- **s**   SIMULATED FACILITY GROUPS

- **l**   LCP

- **c**   Call store

- **#**   QUIT.

5.92 There is a character displayed on the left side of each choice. This character is used to request translations for that entry. Choices **s** and **c** are not valid choices.

6. PARAMETER DEFINITIONS AND CALCULATIONS

6.01 Some reports contain parameters which are unique to that report; however, many of the reports use the same parameters.

6.02 This part defines the information which these parameters are intended to convey. In addition, this part defines any calculations used to derive the specified parameter values.

crt Command (Cathode Ray Tube Display Terminal)

5.81 The **crt** command requests the system to identify the display terminal port and the type of display. The display will include crt 0, crt 1, crt 2, etc, depending on the port connected to the terminal. The terminal type is also displayed; ie, type 1 for black and white, type 2 for color. The last number displayed is a port address.

dst Command (Observe Daylight Saving Time)

5.82 The **dst** command instructs the system to observe daylight saving time and is followed by a "flag" parameter which must have the value **on** or **off**. The **on** value is used when daylight saving time is observed. The command is used only once, at installation, **not each spring and fall.** When the time received from the host PBX changes (to daylight saving time or back to standard time), historical data and reports in the PRO 150 will be in error unless this command is used correctly.

halt Command (Halt System)

5.83 The **halt** command conditions the system to halt or to automatically reboot after serious system errors are detected. The halt or auto-reboot conditioning is selected by an **on** or **off** parameter following the **halt** command.

hertz Command

5.84 The **hertz** command enables system operation in either a 50-Hz or 60-Hz environment. A parameter of **on** or **off** follows the command. The PRO 150 software comes preset to the default value of 60 Hz **(off)**. There is no need to use this command in systems installed within the United States.

ldf Command (Load Floppy Diskette)

5.85 The **ldf** command allows the floppy diskette to be loaded from an external source, such as another computer, via a data link. This command would be used only in the unusual circumstance of having no software on disk available at the customers location; for example, after a disk drive error which erased both disks and the backup generic disk.

peek Command

5.86 The **peek** command permits reading of memory content. The normal contents of memory must be known in detail before this command is useful. A memory address is used in conjunction with the command.

sai Command (Stack Audit Initialize)

5.87 The **sai** command initializes the system for a stack audit by writing a 'background" word on to each stack. The **sai** command should be followed by a stack audit to determine from this point what process has exceeded the allocated stack area.

sa Command (Stack Audit)

5.88 The **sa** command permits the system program stacks to be audited. The audit permits a craftsperson to determine what processes could be exceeding the stack area allocated for that process. An audit should follow an **sai** command. A report is displayed showing the size of each stack, how much was used, and stack pointer address information.

syn Command (List Synopsis of Events)

5.89 The **syn** command displays a synopsis of system events. This command gives the same display in this level as it does in the maint level. (See paragraph 5.77.)

tmreq Command (Automatic Time Request)

5.90 The use of the **tmreq** command determines whether the date and time will be requested from the PBX automatically at restart.

- *ACD CALL:* A state indicating that the agent(s) are talking on an incoming call.

- *AFTER-CALL WORK:* A state indicating that the agent(s) have their headset jacks plugged in, have completed the previous call, and are unavailable to handle an incoming call.

- *AUX WORK:* A state indicating that the agent(s) have the AUX button on their console(s) depressed.

- *AVG AFTER CALL WORK:* Average amount of time that the agent(s) in the report group spent in the after-call work state per incoming call.

$$\text{AVG AFTER CALL WORK} = \frac{\text{AFTER CALL WORK Usage}}{\text{NO. CALL HNDL}}$$

- *AVG HOLD TIME (Incoming):* Average amount of time that a trunk group was in use per incoming call during the report period.

$$\text{AVG HOLD TIME (In)} = \frac{\text{ACD Usage} + \text{Non-ACD In Usage} + \text{Total Delay Usage}}{\text{NO. CALL HNDL} + \text{NO. CALL ABAN (trunk)}}$$

- *AVG HOLD TIME (Outgoing):* Average amount of time that a trunk group or simulated facility group was in use per outgoing call during the report period.

$$\text{AVG HOLD TIME (Out)} = \frac{\text{OUT CALL Usage}}{\text{NO. OUT CALL}}$$

- *AVG POS MAN:* The average number of positions which were manned in the report group during the report period.

$$\text{AVG POS MAN} = \frac{\text{MANNED Usage}}{\text{Length of Report Period}}$$

   Where: Manned usage is the total amount of time that the agents had their headsets plugged in or had a call on hold while their headsets were unplugged. Where AUX work can be identified, it should be subtracted out of the manned usage.

- *AVG POS REQ:* The average number of manned positions required in the report group to handle the carried traffic during the report period at a user-defined speed of answer and weighted call value.

- *AVG SPEED ANS:* The average delay in seconds, encountered by incoming calls during the report period for the report group.

$$\text{AVG SPEED ANS} = \frac{\text{Handled Call Delay} + \text{Abandoned Call Delay}}{\text{NO. CALL HNDL (agent/queue)}}$$

- *AVG TALK TIME IN:* Average amount of time spent talking on incoming calls by the agent(s) assigned to the report group during the report period.

$$\text{AVG TALK TIME IN} = \frac{\text{ACD Usage}}{\text{NO. CALL HNDL (agent/queue)}}$$

- **AVG TALK TIME OUT:** Average amount of time spent talking on outgoing extension calls by the agents assigned to the report group during the report period.

$$\text{AVG TALK TIME OUT} = \frac{\text{OUT CALL Usage}}{\text{NO. OUT CALL}}$$

- **CCS:** Indicates the usage on trunk groups expressed in increments of 100 seconds.

$$\text{CCS (In)} = \frac{\text{Total Delay Usage} + \text{ACD Usage} + \text{Non-ACD Usage}}{100}$$

$$\text{CCS (Out)} = \frac{\text{OUT CALL Usage}}{100}$$

- **EFF:** Indicates the relative efficiency of a report group in relation to a customer-defined objective.

$$\text{EFF} = \frac{\text{EHT}}{\text{WCV}}$$

  Where: EHT, expected holding time, is a customer-defined objective weighted call value, and WCV is the actual weighted call value for the report period.

- **EXT IN (Extension IN):** A state indicating that the agent(s) are talking on an incoming extension call.

- **EXT OUT (Extension Out):** A state indicating that the agent(s) are talking on an outgoing extension call.

- **IDLE AND AVAIL:** A state indicating that the agent(s) are idle and available to receive incoming calls.

- **NO. CALL ABAN:** Indicates the number of incoming calls which abandoned from the report group during the report period.

- **NO. CALL HNDL (trunk):** Indicates the number of incoming calls on the trunk group which were answered during the report period.

  NO. CALL HNDL (trunk) = Incoming ACD Calls + Incoming Non-ACD Calls

- **NO. CALL HNDL (agent/queue):** Indicates the number of incoming calls which were answered by the agent(s) assigned to the report group during the report period.

  NO. CALL HNDL (agent/queue) = Incoming ACD Calls

- **NO. CALL WAIT:** Indicates the number of simultaneously delayed calls in the queue at any given time.

- **NO. FCST CALL:** Indicates the forecasted number of calls to be carried by a split during some future period of time. Carried calls include both handled (answered) and abandoned.

  NO. FCST CALL (Long-Term): This parameter is the weighted average of the three previous week's data, adjusted by a correction factor from the previous year and a growth factor specified by the user.

NO. FCST CALL $= [(NCC_1.a_1+NCC_2.a_2+NCC_3.a_3).b].g$

Where: NCC_1 = Number of calls carried during the equivalent report period from 1 week past.

NCC_2 = Number of calls carried during the equivalent report period from 2 week past.

NCC_3 = Number of calls carried during the equivalent report period from 3 weeks past.

a_1, a_2, a_3 are weighting coefficients such that $a_1+a_2+a_3 = 1$

g = growth factor specified by the user

b = seasonal correction factor $= \dfrac{NCC_{\omega f}}{FCC'}$

Where: $NCC_{\omega f}$ = Number of calls carried during the week which is 1 year earlier than the day being forecasted.

FCC' $= NCC_{\omega 1}.a_1+NCC_{\omega 2}.a_2+NCC_{\omega 3}.a_3$

$NCC_{\omega x}$ is 52 weeks before NCC_x (eg, $NCC_{\omega 1}$ is 52 weeks before NCC_1).

NO. FCST CALL (Intraday): Calculated by a model utilizing the forecasted traffic from NO. FCST CALL (Long-Term) and a correction factor based on the carried calls during the preceding 8 hours.

NO. FCST CALL (Intraday) $= X . c$

Where: X = The long-term forecast of the carried calls from the time period of interest: eg, NO. FCST CALL for 0900 − 0930.

c = Correction factor = Total number of actual calls carried during the preceding 8 hours divided by the total number of calls forecasted for the same period of time.

- **NO. OUT CALL:** In the performance and status reports, this parameter indicates the number of agents in the report group who are currently on an outgoing extension call.

  In all other reports, NO. OUT CALL will be the total number of outgoing calls made by the agent(s) or carried on the trunk(s) in the trunk group during the report period.

- **NO. OVFL:** This data is not sent from the PBX, and will always be zero (Fig 11).

- **NO. POS MAN:** Indicates the number of positions in the report group which have the headsets plugged in or have a call on HOLD while the headsets are unplugged.

- **NO. POS REQ:** Indicates the number of agents required to handle the NO. FCST CALL at a customer-defined service objective.

- **NO. QUE OVFL:** Indicates the total number of incoming calls which overflow (outflow) to another split during the report period.

- **NO. TRK:** Indicates the number of trunks which comprise the trunk group.

- **OLD CALL WAIT:** Indicates the length of delay, in seconds, of the oldest call in the queue at a specific instant of time.

- **%ABN:** Indicates the percentage of incoming calls which abandoned from the queue between specific time increments during the report period.

  %ABN = NO. CALL ABAN after being delayed between 0-2 sec, 2-4 sec, 4-6 sec, etc, divided by the total NO. CALL ABAN from the queue during the report period times 100.

- **%ANS:** Indicates the percentage of incoming calls which were answered between specific time increments during the report period.

  %ANS = NO. CALL HNDL (Queue) after being delayed between 0-2 sec, 2-4 sec, etc, divided by the total NO. CALL HNDL (queue) during the report period.

- **%ALL TRK BUSY:** Indicates the percentage of time during the report period that all trunks in the trunk group were simultaneously busy.

$$\% \text{ALL TRK BUSY} = \frac{\text{All Trunks Busy Usage}}{\text{Length of the Report Period}} \times 100$$

- **%AUX WORK:** Indicates the percentage of time during the report period that the agent(s) assigned to the report group spent in the auxiliary work state.

$$\% \text{AUX WORK} = \frac{\text{AUX WORK Usage}}{\text{Manned Usage} + \text{AUX WORK Usage}} \times 100$$

  Where: AUX WORK usage is the total amount of time consoles in the report group had the AUX WORK key depressed during the report period.

  Manned usage is the total time that the agents had their headsets plugged in or had a call on HOLD while their headsets were unplugged. Where AUX WORK can be identified, it should be subtracted out of the manned usage.

- **%OCC:** Indicates the percentage of time during the report period that the report group was busy and not available to handle additional calls.

$$\% \text{OCC (Agents)} = \frac{\text{Occupied Usage}}{\text{Manned Usage}} \times 100$$

  Where: Occupied usage includes talk time on all incoming calls and outgoing calls plus after-call work time.

  Manned usage is the total time that the agents had their headsets plugged in or had a call on HOLD while their headsets were unplugged. Where AUX WORK can be identified, it should be subtracted out of the manned usage.

$$\%\,\text{OCC (Trunks)} = \frac{\text{Occupied Usage}}{\text{Available Time}} \times 100$$

Where: Occupied usage includes total delay time of all calls, and total talk time on all calls.

Available time is the number of trunks in the group times the length of the report period.

- **TOTAL TIME MAN:** Indicates the total time that an agent spent with the headset plugged in or had a call on HOLD with the headset unplugged during the report period. (Applies only to report groups composed of a single agent.)

- **WCV:** Indicates the average time spent handling an incoming ACD call during the report period.

$$\text{WCV} = \frac{\text{ACD Usage} + \text{AFTER CALL WORK Usage}}{\text{NO. CALL HNDL (agent/queue)}}$$

7. MAINTENANCE CHARACTERISTICS

7.01 The PRO 150 has a remote maintenance link for dial-up applications. This link requires a 2565HKM telephone set and a 212AR data set (or equivalent) on the remote end and another on the minicomputer end. The link operates over a standard switched network. The maintenance display terminal can call up the same reports and perform the same functions as terminal 0, described in earlier paragraphs.

11V03 MINICOMPUTER AND ASSOCIATED EQUIPMENT

7.02 The 11V03 minicomputer and associated hardware may be repaired as needed on a separate maintenance contract.

DISPLAY TERMINAL(S)

7.03 The terminal(s) may be repaired or replaced on a separate maintenance contract.

DATA SETS

7.04 The 212AR, 202Ts, and ALDs are replaceable units.

8. REFERENCES

8.01 This issue is based on the following drawings:

DRAWING	TITLE
SD-66959-01	PBX Systems—12A and 13A Customer Information Systems—
	Computer and Terminal Equipment
J59224A	Management Information System—Performance Reporting Option—Minicomputer Equipment Specification
J59224B	Management Information System—Performance Reporting Option—Software Equipment Specification

8.02 Other related PRO 150 documents are as follows:

DOCUMENT	TITLE
554-010-148	Performance Reporting Option (PRO) 150—Identification Information—Call Management System (CMS)
554-010-149	Performance Reporting Option (PRO) 150—Preinstallation Information—Call Management System (CMS)
554-010-150	Performance Reporting Option (PRO) 150—Call Management System (CMS)—Installation, Test, and Maintenance (TOP)
999-500-141	Performance Reporting Option (PRO) 150—Operations Manual

DOCUMENT	TITLE	DOCUMENT	TITLE
809-160-155	Management Information System—Performance Reporting Option (PRO) 150—Equipment Design Requirements—PBX Systems	TLM-65200-01	12A Customer Information System (CIS) Error Messages