CHANNEL ADMINISTRATION

DESCRIPTION

REMOTE SWITCHING SYSTEM (RSS)

CONTENTS PAGE

1. GENERAL

1.01 This section provides a description of the functions of the 10A Remote Switching System (RSS) channels and a description of the network administrator's responsibilities for administering the RSS channels. Also provided is some general engineering information pertinent to the provision of RSS channel circuits.

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

1.03 The title of each figure includes a number(s) in parentheses which identifies the paragraph(s) in which the figure is referenced.

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2. CHANNEL OPERATION

2.01 The RSS consists of three major components:

(1) Remote terminal

(2) Data link and the interconnecting facilities

(3) Controlling electronic switching system.

2.02 The remote terminal operates primarily as an extension of the host electronic switching system. Commands are issued to the remote terminal via a data link. At the remote terminal a microprocessor controller interprets these commands and performs the request function. In addition, the controller scans the network and line appearances in the remote terminal for changes of state and reports these changes, via the data link, to the host electronic switching system.

2.03 The RSS remote terminal is connected to its controlling host electronic switching system via a single homogeneous channel group. The termination of the channel group in the host electronic switching system can be implemented with normal channel bank hardware with the appropriate plug-ins. The only restriction is that the duplicated data links must be separated into different circuit groups (and assigned to channel 12), so that the failure of a single piece of common equipment will not result in loss of both data links.

2.04 Each 1024 line remote terminal is capable of providing a maximum of 120 individual voice channels (two of which are assigned as data links). A maximum size system of 2048 lines will thus provide 240 voice channels. The requirement to place the duplicate data links on individual carrier circuit groups implies that a minimum of two carrier systems are necessary for the smallest system. Only two voice channels are needed to implement the data link function independent of the size of the RSS entity.

2.05 The trunk group (channels) that interconnects the remote terminal to the host is a high occupancy group that is sized using extreme value engineering methods. Also, it has the following characteristics:

(a) It carries both local interoffice and toll traffic as well as the set-up portion of each intra-RSS call.

(b) It terminates on the line side of the host ESS office. For this reason, the circuits in this facilities group are normally referred to as "channels" to distinguish them from other interswitch trunks.

(c) A duplicated data link to control the remote terminal is included in this group. Two voice frequency channels are required for this function.

(d) For No. 1/1A ESS switch applications, two channels are permanently connected to two customer digit receivers (CDRs) at the host. This permanent connection provides an RSS subscriber with the same access to a CDR (for dial tone) as a subscriber in the host office. (This feature becomes available with the 1E7/1AE7 generic programs.)

2.06 The remote terminal can only interface with the channel group that interconnects the remote terminal to the host. In the community dial office (CDO) replacement application, this characteristic requires all trunk groups to or from the former CDO entity to be routed via the host to any adjacent class 5 central offices. In instances where extended area service (EAS) trunking does not dominate, the use of a single high occupancy group between the RSS and its host may reduce trunking facilites by replacing a number of smaller and independent dedicated trunk groups (ie, operator, coin, noncoin, Centralized Automatic Message Accounting [CAMA], etc).

2.07 More detailed information on the operation of the channels and the RSS remote terminal itself can be found in Sections 255-092-010 and 231-070-022.

3. CHANNEL ENGINEERING

3.01 All traffic (ie, incoming, outgoing, and all RSS intraoffice call processing) is carried on the RSS channel circuits. The remote terminal custom calling features assigned in the remote units are also processed at the host electronic switching system over these circuits. Engineering of these circuits is based on traffic loads using extreme value engineering (EVE) once a month (OAM) techniques along with Erlang B tables.

3.02 All channel interface circuits estimated for the engineering period should be installed in the initial installation. That is, the quantity of channel interface circuits required at the end of period (EOP) should be provided at cutover. Any change in channel requirements should be determined by network administration and engineering analysis and should be based on the latest available data. The provisioning of any additional circuits is explained in Part 4 of this section.

3.03 Detailed information on the engineering of channel interface circuits may be found in Section 255-062-030 for initial traffic orders and Section 255-062-040 for growth and additions.

4. CIRCUIT PROVISIONING

4.01 The channel interface circuit quantities provided initially at the remote terminal should be sufficient to meet the EOP requirements. However, sufficient carrier and/or cable facilities between the RSS and the host will not normally be provided for the EOP traffic requirements.

4.02 Additional facilities when required will be provided by outside plant engineering. Outside plant engineering will make provisions for establishment of the facilities between the host and the RSS. The quantity of new facilities will be based on design information (see Section 255-062-040) and traffic data provided by the traffic engineer and the network administrator.

4.03 Connection of the outside plant facilities will be accomplished by issuance of a carrier order that will be generated by the Circuit Provisioning Center (CPC). These orders come under the Administration of Designed Services (ADS) standards. General methods and procedures for ADS type orders are covered in Section 010-505-100. While specific references to carrier orders are not complete, the principles, work flows, and responsibilities shown in the section will be applicable for most cases.

4.04 The network administrator must provide the CPC with line equipment appearances ***at the***

host, for the new channel interface circuits. The assignments provided to the CPC should be based on the latest load balance information available and the fact that these circuits are high usage (20 to 25 hundred call seconds [CCS]) in nature. The administrator will also provide the channel assignments at the remote terminal. For details on these assignments, refer to the Translations Guide (TG-1A) for No. 1/1A ESS switch host applications and the Translations Guide (TG-2H) for No. 2 ESS switch host.

5. CHANNEL CIRCUIT ADMINISTRATION

5.01 One of the tools used for administration of switching machines is traffic data. In the case of an RSS, this data is provided via the host electronic switching system. A listing of these measurements for both No. 1 and No. 2B ESS switch hosts are in the following paragraphs.

5.02 The following list of measurements are for No. 1/1A ESS switch host applications only. The first five of these measurements are provided on a one per host basis.

OFFICE COUNT	DEFINITION
455	***RSS Call Register Peg Count:*** Counts the number of times an RSS call register is seized by a client program.
457	***RSS Call Register Overflow:*** Counts the number of times a request for an RSS call register cannot be filled due to none being available.
459	***RSS Call Register Usage:*** Measures RSS call register usage. This count is provided on a 10-second scan basis.
480	***Remote Order Buffer Queue Peg Count:*** Counts the number of times a request for a remote order buffer is put on queue due to none being available.
481	***Remote Order Buffer Usage:*** Measures remote order buffer usage. This count is provided on a 10-second scan basis.

5.03 Traffic measurement code (TMC) 112 defines a set of traffic measurements that are collected on a per RSS basis. The equipment group or office count number (EGO) consist of the RSS office count number plus the number of the RSS being measured (01 through 31). The RSS number is derived from the RSS common block as placed in translations (ESS Form 1122, RSS Group Record, TG-1A, Division 3, Section 1w). The following is a list of the registers with TMC 112.

EGO	DEFINITION
0032 + RSS NUM.	***RSS-Total A-Link Usage:*** Count is taken at 100-second intervals of each line concentrator found busy. This count does not include out-of-service usage.
0064 + RSS NUM.	***Total RSS Originating Calls Peg Count:*** Counts the total number of originations where at least one digit has been received by the host electronic switching system.
0096 + RSS NUM.	***Total Intra-RSS Call Attempts Peg Count:*** Counts the total number of call attempts that originate and terminate within the same RSS. This register is scored after digit translation.
0128 + RSS NUM.	***Total ESS-RSS Call Attempts Peg Count:*** Counts the total number of call attempts that originate from or through the host ESS and terminate to the RSS. This register is scored after digit translation.
0160 + RSS NUM.	***Total RSS-ESS Call Attempts Peg Count:*** Counts

EGO	DEFINITION
	the total number of call attempts that originate in the RSS and terminate to or through the host electronic switching system. This register is scored after digit translation.
0192 + RSS NUM.	***RSS Intermodule Junctor Usage:*** Count is taken at 100-second intervals of these intermodule junctors found busy. This count does not include out-of-service usage.
0224 + RSS NUM.	***RSS Intramodule Junctor 0 Usage:*** Count is taken at 100-second intervals of these intramodule junctors in Module 0 found busy. This count does not include out-of-service usage.
0256 + RSS NUM.	***RSS Intramodule Junctor 1 Usage:*** Count is taken at 100-second intervals of these intramodule junctors in Module 1 found busy. This count does not include out-of-service usage.
0352 + RSS NUM.	***RSS Block Dial Tone Peg Count:*** Counts the number of times the host electronic switching system dropped an origination due to blockage in the RSS network or on the channels or in the ESS network.
0384 + RSS NUM.	***Terminating Call Failure Peg Count:*** Counts the total number of times a call fails to terminate due to problems with the called party's line or with a universal service circuit.
0416 + RSS NUM.	***No Universal Service Circuit (USC)/Bus Call Failure Peg Count:*** Counts the number of times a call fails due to no universal service circuit or metallic bus.
0448 + RSS NUM.	***No Channel Call Failure Peg Count:*** Counts the number of times a terminating call failed due to no channel. Originations dropped because of no channels are included on the blocked dial tone count.
0480 + RSS NUM.	***Reswitch Up Attempts Peg Count:*** Counts the number of times an attempt was made to reswitch an intra-RSS call from an RSS network connection to an ESS network connection.
0512 + RSS NUM.	***Reswitch Up Failures Peg Count:*** Counts the number of times an attempt to complete a reswitch up failed.
0544 + RSS NUM.	***Intra-RSS Network Matching Loss Peg Count:*** Counts the number of failures to find a path in the RSS network between two RSS lines.
0576 + RSS NUM.	***Terminating First Failure to Match Peg Count:*** Counts the first failures to find a path through the RSS network for terminating calls.
0608 + RSS NUM.	***Terminating Final Failure to Match Peg Count:*** Counts the number of final failures to find a path through the RSS network for terminating calls to the RSS.
0640 + RSS NUM.	***Call Failure Due to RSS Peg Count:*** This count is a total of RSS office counts 0384 (terminating failure peg count), 0416 (no USC/bus call failure), 0448 (no channel call failure and 0608 (terminating final failure to match).
0832 + RSS NUM.	***Channel Interface Usage:*** Count is taken at 100-second intervals. This count is for each channel found busy. This count does not include out-of-service usage.

EGO	DEFINITION
0864 + RSS NUM.	***Channel Interface Peg Count:*** Counts the number of attempts to seize a channel. This count may be pegged more than once during the processing of one call.
0896 + RSS NUM.	***Channel Interface Overflow:*** Counts the number of times all channels were found to be busy when an attempt for a channel was made.
0928 + RSS NUM.	***Channel Interface Maintenance Usage:*** Count is taken at 100-second intervals. This count is for each channel found to be out-of-service busy.
0960 + RSS NUM.	***Intra-RSS Usage:*** This division of revenue count will be calculated internally by subtracting channel usage from total junctor usage.

5.04 The following three counts, also TMC 112, are collected at the RSS and transmitted to the electronic switching system every quarter-hour. They are utilized in computing counts for the daily and quarter-hour reports.

EGO	DEFINITION
1120 + RSS NUM.	***Total Originating Calls:*** This count is pegged each time an origination is processed by the RSS.
1152 + RSS NUM.	***Total Dial Tone Delay Time:*** This count is a cumulative total in hundreds of milliseconds of the dial tone time delay for all calls originating at the RSS.
1184 + RSS NUM.	***Total Calls With Dial Tone Delay > 3 Seconds:*** This count is pegged for each call originating at the RSS which experiences dial tone delay > 3 seconds.

5.05 The following three counts, also TMC 112, are collected at the RSS and transmitted to the ESS every quarter-hour. These counts are printed out on the RSS quarter-hour traffic report.

EGO	DEFINITION
1216 + RSS NUM.	***Total Interrupts of Duration > 5 Milliseconds:*** This count is pegged each time an RSS 10-millisecond timed interrupt extends longer than 5 milliseconds.
1248 + RSS NUM.	***Total C to C Cycles:*** This count is pegged each time the RSS completes a C to C cycle.
1280 + RSS NUM.	***Total Base Level Slips:*** This count is pegged each time the RSS slips a base level cycle.

5.06 The RSS data from the host is processed through and reported by the Network Operations Report Generator (NORGEN) and further downstream by RSS Central Office Engineering Reports (COER).

5.07 The NORGEN reports that are the most useful in administering the channel interface circuits are the following:

- Dial Tone Speed Exception Report
- Ineffective Attempt Exception Report
- Load and Service Summary Report.

5.08 A brief description of these reports and the portions that are pertinent to the RSS are provided in the following paragraphs. Detailed information on NORGEN can be obtained by consulting Section 190-512-020. Detailed information on RSS COER and the COER Channel Interface Report may be found in Section 231-070-561.

A. Dial Tone Speed Service Exception Report

5.09 The Dial Tone Speed Service Exception report will provide an alert that an abnormal dial tone delay condition has occurred and, as a result, corrective action may be required.

5.10 The report format is shown in Fig. 1. The four sections of the report are:

- Dial Tone Speed Results

- Customer Digit Receiver Data
- RSS Results (only printed for RSS host offices)
- Supporting Data.

The first section shows the measured percentage of dial tone speed by customer digit receiver type, ie, TOUCH-TONE® calling and dial pulse (DP) together with appropriate test and delay counts.

5.11 The percentage of dial tone delay (DTD) calculations, TOUCH-TONE calling percentage of DTD and DP percentage of DTD, are key quantities which control production of this exception report, ie, this report is only generated in situations where either the percentage of DP or TOUCH-TONE calling DTD exceeds the user-specified threshold. Otherwise, the report is not generated.

5.12 The remaining three portions of the report supply supporting data on the customer digit receivers (by type) and supplementary data, which are contributory to a DTD condition. This should provide the network administrator with sufficient data to decide the appropriate course of action.

5.13 After the CDR results are printed, the program checks to see if the electronic switching system office is a host office for RSS. If it is not a host office, this portion of the report is omitted. If it is a host office, the percentage of DTD results of each individual RSS are checked to see if they fail the user supplied threshold. Lines of data are printed only for RSS units which fail the threshold tests. Therefore, the percentage of DTD line is always printed with a flag, followed by two supporting lines of data. The host electronic switching system can serve up to 31 RSS units.

5.14 Regardless of the outcome of the CDR and RSS tests, the bottom portion of the report is printed containing overall call processing load data (E-E cycles, line scan completions, originating peg count, etc).

B. Ineffective Attempt Service Exception Report

5.15 The Ineffective Attempt Service Exception report provides the network administrator with an alert that an abnormal level of ineffective attempt has occurred and that corrective action may be required.

5.16 The report format is shown in Fig. 2. The seven sections of the report:

- Percentage of Ineffective Attempts
- Percentage of Originating Matching Loss
- Percentage of Incoming Matching Loss
- Percentage of No Circuits
- Transmitter Overflow Data
- Miscellaneous Service Circuit Data
- Percentage of Miscellaneous Ineffective Attempts.

5.17 The first part of the report shows the total office percentage of ineffective attempts (IA) with the report. If the percentage of IA is in violation of the user-defined threshold value, the report is generated; if not, the report is not printed.

5.18 The remaining six parts of the report are intended to supply to the network administrator a supportive breakdown of the causes for the percentage of IA which generated the report.

5.19 The percentage of IA is defined as the sum of the overflow, reorder, and announcement trunk peg counts listed in the first section of the report, divided by originating plus incoming peg count. As such, the percentage of IA is a measure of the overall IA rate for the entire machine.

5.20 Subsequent sections of the report are designed to provide some insight into the specific cause(s) for a percentage of IA threshold failure. After printing the first section, the program tests the percentage of RSS IAs and if the test fails, the percentage of IA is printed with a flag followed by the supporting RSS data. If the test does not fail, only the line containing the threshold item is printed without a flag and without the supporting data.

5.21 The next two sections of the report deal with transmitter and miscellaneous service circuit overflows. The program tests for excessive overflow on each of the items listed in Fig. 2 and prints a flagged line of results in response to each threshold failure.

5.22 The sample report contains all the possible line printouts. For a No. 1/1A ESS switch of-

fice not equipped with certain features, appropriate lines will either never print or be printed with dashes.

C. Load Service Summary Report

5.23 The Load Service Summary Report provides a general profile of the overall office load and service levels on a scheduled basis. Provided within the report contents is the ability to (1) monitor key service indicators and (2) obtain information about overall office traffic volumes.

5.24 The report format is shown in Fig. 3. The seven sections of the report are:

- Office Load Volumes
- Total RSS Load Volumes
- Ineffective Attempts
- Dial Tone Results
- RADR Results
- Network Management
- RSS Load Service Summary.

5.25 The first section of the report gives a general view of office load volumes, listing peg counts by call class and their respective percentage of originating plus incoming (0+I) traffic. Also provided in this section are three measurements of call processing and the A link usage.

5.26 The second section of the report contains RSS data for those offices serving as RSS host offices. Included are both peg counts and usage totals for all RSS units being served.

5.27 The third section provides a summary of 12 IA counts. The fourth and fifth sections of the report are devoted to key service indicators in the dial tone and receiver attachment areas.

5.28 The sixth section of the report gives total peg counts of calls affected by network controls that have been activated during the report hour.

5.29 The last section of the summary contains data for individual RSS units. The use of this report is controlled by the user, ie, data for all RSS units do not have to be printed each time a report is requested, but only for those units selected by he user.

5.30 The following lists of measurements definitions are for No. 2 ESS host applications. These lists have been provided by measurement collection schedule. The first list provides the RSS measurements from the host quarter-hour schedule.

REGISTER DESIGNATION	DESCRIPTION
Q22	***RSS Origination Hopper Peg Count:*** Counts the number of RSS subscribers entering the origination hopper.
Q24	***RSS Origination Hopper Time Out Peg Count:*** Counts the number of RSS customers that have timed out from the origination hopper.
Q26	***RSS Origination Hopper Push Out Peg Count:*** Counts the number of RSS subscribers pushed out of the origination hopper.
Q28	***RSS Origination Hopper Dynamic Maximum Length:*** Provides the maximum number of entries in the hopper at one time.
Q30	***RSS Origination Hopper Entry 10 Seconds Count:*** Counts the number of RSS subscribers that have stayed in the hopper longer than 10 seconds.
RTQ1	***RSS Number:*** The number of the RSS for which the counts are recorded. The number will range from 01 through 31.
RTQ2	***Originating Calls:*** The number of originations processed by the RSS.
RTQ3	***Dial Tone Delay:*** The cumulative delay (in tenths of sec-

REGISTER DESIGNATION	DESCRIPTION
	onds) that all RSS calls have experienced.
RTQ4	***Long Dial Tone Delays:*** The number of calls originating at an RSS that have experienced a dial tone delay over 3 seconds.
RTQ5	***Long Interrupts:*** A count of the number of 10 millisecond interrupts that exceed 5 milliseconds in duration.
RTQ6	***C to C Cycle:*** The number of times class C work is entered by the operating system. This is equivalent to the number of base level cycles.
RTQ7	***Base Level Slips:*** The number of times base level work is slipped in time. This indicates that a cycle of 100 millisecond interject work (line scanning) has been skipped.

5.31 The following measurements are from the Load Service Measurement Schedule for No. 2 ESS switch.

REGISTER DESIGNATION	DESCRIPTION
LSM 22	***RSS Origination Hopper Peg Count:*** Counts the number of RSS subscribers entering the origination hopper.
LSM 24	***RSS Origination Hopper Time Out Peg Count:*** Counts the number of RSS customers that have timed out from the origination hopper.
LSM 26	***RSS Origination Hopper Push Out Peg Count:*** Counts the number of RSS subscribers pushed out of the origination hopper.
LSM 28	***RSS Origination Hopper Dynamic Maximum Length:*** Provides the maximum number of entries in the hopper at one time.
LSM 30	***RSS Origination Hopper Entry 10 Seconds Count:*** Counts the number of RSS subscribers that have stayed in the hopper longer than 10 seconds.
RTM1	***RSS Number:*** The number of the RSS for which the counts are recorded. The number will range from 01 through 31.
RTM2	***Originating Calls:*** The number of originations processed by the RSS.
RTM3	***Dial Tone Delay:*** The cumulative delay (in tenths of seconds) that all RSS calls have experienced.
RTM4	***Long Dial Tone Delays:*** The number of calls originating at an RSS that have experienced a dial tone delay over 3 seconds.
RTM5	***Long Interrupts:*** A count of the number of 10-millisecond interrupts that exceed 5 milliseconds in duration.
RTM6	***C to C Cycle:*** The number of times class C work is entered by the operating system. This is equivalent to the number of base level cycles.
RTM7	***Base Level Slips:*** The number of times base level work is slipped in time. This indicates

REGISTER DESIGNATION	DESCRIPTION
	that a cycle of 100 millisecond interject work (line scanning) has been skipped.

5.32 The following list of measurements is a part of the hourly (H) schedule provided by the No. 2 ESS switch host.

REGISTER DESIGNATION	DESCRIPTION
OFT 92	***RSS Origination Hopper Peg Count:*** Counts the number of RSS subscribers entering the origination hopper.
OFT 94	***RSS Origination Hopper Time Out Peg Count:*** Counts the number of RSS customers that have timed out from the origination hopper.
OFT 96	***RSS Origination Hopper Push Out Peg Count:*** Counts the number of RSS subscribers pushed out of the origination hopper.
OFT 98	***RSS Origination Hopper Dynamic Maximum Length:*** Provides the maximum number of entries in the hopper at one time.
OFT 100	***RSS Origination Hopper Entry 10 Seconds Count:*** Counts the number of RSS subscribers that have stayed in the hopper longer than 10 seconds.
RTT1	***RSS Number:*** The number of the RSS for which the counts are recorded. The number will range from 01 through 31.
RTT2	***Total RSS Originating Calls:*** This peg count is incremented for all calls where at least one digit has been dialed.
RTT3	***Total Intra-RSS Call Attempts:*** The peg count is incremented, after digit translation, for calls which originate and terminate in the same RSS.
RTT4	***Total ESS-RSS Call Attempts:*** This count is incremented, after digit translation, for calls that originate in the host and terminate in the RSS.
RTT5	***Total RSS-ESS Call Attempts:*** A peg count is incremented, after digit translation, for call attempts which originate in the RSS and terminate in the ESS host.
RTT6	***Channel Interface:*** This count is incremented for every attempt made to seize a channel.
RTT7	***Channel Interface Overflow:*** This count will be scored when an attempt to seize an interface channel has found them all busy.
RTT8	***Blocked Dial Tone:*** Peg count is incremented whenever the host drops an RSS origination due to blockage in the RSS network, ESS network, service circuits, channels, or the ESS originating hopper.
RTT9	***RSS Terminating Call Failure:*** This count is incremented every time a call fails to terminate due to called party's line hardware or remote terminal hardware problem.
RTT10	***Universal Service Circuit (USC) or Bus Failure:*** A count is incremented when a call fails due to no universal

REGISTER DESIGNATION	DESCRIPTION
	service circuit or no metallic bus.
RTT11	***Channel Unavailable:*** Peg count is incremented whenever a terminating call fails due to the unavailability of a channel. Originating no channel failures are included in the blocked dial tone count.
RTT12	***No IAO Path:*** A peg count is incremented whenever an attempt to find a path in the RSS network for an intra-RSS call fails. This failure is called an intra-RSS network matching loss.
RTT13	***First Path Failure:*** This count is incremented on the first failure to find a channel and a path in the RSS network for an ESS-RSS call. Failures of this type are included in the blocked dial tone peg count.
RTT14	***Final Path Failure:*** This peg count is incremented on the final failure to find a channel and a path in the RSS network for an ESS-RSS call. Originating failures of this type are included in the blocked dial tone peg count.
RTT15	***Reswitch Up:*** A peg count is incremented for each attempt made to reswitch an intra-RSS call from an RSS network to an ESS network connection. The peg will occur whether the attempt is successful or not.
RTT16	***Reswitch Up Failure:*** This count is incremented when an attempt to reswitch up fails.
RTT17	***RSS Call Failure:*** This count is the sum of RTT8 plus RTT9 plus RTT10 plus RTT 13 plus this count is incremented when an ESS-RSS call attempt fails because the RSS is in a stand alone mode.
RTT18	***Channel Usage:*** This count is incremented every time a channel is found busy.
RTT19	***Channel Maintenance Usage:*** This count is incremented whenever an RSS channel is found maintenance busy (out of service).
RTT20	***A Link Usage:*** This usage count is incremented whenever an RSS line concentrator A link is found traffic busy (***not*** maintenance busy).
RTT21	***Junctor Usage:*** This count is incremented when an intermodule junctor is found busy.
RTT22	***Junctor Usage-Module 0:*** This count is scored for each intramodule junctor in Module 0 found busy.
RTT23	***Junctor Usage-Module 1:*** This usage count is scored for each intramodule junctor in Module 1 found busy.
RTT24	***Line to Line Usage:*** This measurement is on intra-RSS calls and is generated by subtracting channel usage from total junctor usage.
RTT25	***Dial Tone Delay:*** This count is the cumulative delay (in tenths of seconds) that all RSS calls have experienced in obtaining dial tone.
RTT26	***Long Dial Tone Delays:*** This measurement counts the

REGISTER DESIGNATION	DESCRIPTION
	number of calls originating at the RSS which experience dial tone delay in excess of 3 seconds.
RTA1 (optional)	***RSS Number:*** This number of the RSS (01 through 31) for which the A link group usage (RTA 2 through 33) was obtained.
RTA2 thru 33 (optional)	***A Link Group Usage:*** This A-link usage count is on an individual concentrator basis. A maximum of 16 concentrators per module may be equipped, therefore, 32 usage registers are provided per RSS. The usage count is incremented once for each A link (associated with lines only) that is found busy, not maintenance busy (out of service).

5.33 The following measurements are provided as part of the daily measurement schedule from the No. 2B ESS switch host.

REGISTER DESIGNATION	DESCRIPTION
RTD1	***RSS Number:*** The number of the RSS for which line to line usage was recorded. The RSS numbers can range from 01 through 31.
RTD2	***Line to Line Usage:*** This measurement is obtained by subtracting channel usage from total junctor usage.

```
                    *** DTS SERVICE EXCEPTIONS ***


  ENTITY:XXXXXXXXXXXX    DATE:XX/XX/XX    TIME:XX:XX    INTERVAL:XXX.X MIN

        %DTO                TSTS          DLYS
*  TT    TTT.T               XXXX          XXXX
*  DP    TTT.T               XXXX          XXXX


  CDR  GRPS  % OFL       PC  % OCC     #MB  NCI      HT
*  COM   #  TTT.T     XXXXX XXX.X    XXX.X  XXX   XXX.X
*   TT   #  TTT.T     XXXXX XXX.X    XXX.X  XXX   XXX.X
*   DP   #  TTT.T     XXXXX XXX.X    XXX.X  XXX   XXX.X

  ROB Q PC  = XXX       ROB OCC =     XXX.X  ROB QTY  = XXXX

  RSS ID XXXXXXXXXXXX

      %  DTO                   TSTS        DLYS
* TT/DP TTT.T                  XXXX        XXXX

       ORIG PC = XXXXX                LN-LN USAGE = XXXX
```

Fig. 1—Dial Tone Speed Exception Report Format (No. 1 ESS Switch Host) (Sheet 1 of 2) (5.08)

```
*** DTS SERVICE EXCEPTIONS (Contd) ***

            % OFL      PC   % OCC    # MB   NCI      HT
CHANNEL     XXX.X    XXXX   XXX/X   XXX.X   XXX   XXX.X

E-E CYCLES = XXXXXX          LN SCAN COMP = XXXXXX
ORIGPC     =  XXXXX          INC PC       =  XXXXX  A LK CCS = XXXXX
BLK DT DEL =  XXXXX
BLK DT Q PC=  XXXXX
POB OCC    =  XXX.X          POB OFL      =  XXXXX

#NOTICE:  THE OVERFLOW REGISTER FOR THIS CDR GRP APPEARS TO HAVE
          RECYCLED. THE % OFL AND HT COMPUTATIONS HAVE
          BEEN ADJUSTED.
```

Note: The CDR overflow registers are limited to 2047 registrations and then recycled. A program calculation determines if a register appears to have recycled in which case a # sign is printed followed by the NOTICE message.

Fig. 1—Dial Tone Speed Exception Report Format (No. 1 ESS Switch Host) (Sheet 2 of 2) (5.08)

```
                    ***INEFF ATTEMPT SERVICE EXCEPTION***

ENTITY:XXXXXXXXXXXX   DATE:XX/XX/XX   TIME:XX:XX   INTERVAL:XXX.X MIN

* %INEFF ATT - TTT.T   IA PC          = XXXXX  O+I PC=XXXXX  DED OFL XXXX
                       COM OFL PC     = XXXXX
                       REG OFL PC     = XXXXX
                       RO ANN PC      = XXXXX
                       NC ANN (RI183) = XXXXX
                       NC ANN (RI180) = XXXXX
                       EMG ANN1       = XXXXX
                       EMG ANN2       = XXXXX

                       RSS FAIL       = XXXXX

RSS ID XXXXXXXXXXXX
* %INEFF ATT - TTT.T   RSS CALL FAIL  = XXXXX  O+I PC = XXXXX

                 % OFL       PC      % OCC     #MB      NCI       HT
CHANNEL          XXX.X       XXXX    XXX.X     XXX.X    XXX     XXX.X

* %ORIG ML = TTT.T     ORIG ML        = XXXXX  ORIG PC  = XXXXX
                       OUTG ML        = XXXXX  OUTG PC  = XXXXX
                       IAO ML         = XXXXX  IAO PC   = XXXXX
                       A LK CCS       = XXXXX

* %INC ML = TTT.T      TOT IML        = XXXXX  INC PC   = XXXXX
                       TERM ML        = XXXXX  TERM PC  = XXXXX
                       TAN OFL        = XXXXX  TAN PC   = XXXXX
                       T-T OFL        = XXXXX  T-T PC   = XXXXX
                       A LK CCS       = XXXXX

* % NO CKT   = TTT.T   TOT TRK NC     = XXXXX  O+I PC   = XXXXX
                       ORIG NC        = XXXXX
                       TAN NC         = XXXXX

XMTR OFL          % OFL      PC     % OCC    #MB     NCI    HT (SEC)
   MF           * TTT.T    XXXXX    XXX.X   XXX.X    XXX    XXX.X
   DP           * TTT.T    XXXXX    XXX.X   XXX.X    XXX    XXX.X
   RP           * TTT.T    XXXXX    XXX.X   XXX.X    XXX    XXX.X
   PCI          * TTT.T    XXXXX    XXX.X   XXX.X    XXX    XXX.X
```

Note: The T indicates that the report item has an associated threshold value. The X represents a non-threshold number.

Fig. 2—Ineffective Attempt Service Exception Report Format (No. 1 ESS Switch Host) (Sheet 1 of 2) (5.16, 5.21)

INEFF ATTEMPT SERVICE EXCEPTION (Contd)

MISC SVC CKT OFL	* % OFL	PC	% OCC	#MB	NCI	HT (SEC)
BSY TN	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
ROH TONE	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
ROH ANN	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
PD ANN	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
VAC CODE ANN	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
RO ANN	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
CN OVT ANN	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
INTC ANN	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
CTX ANN	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
IAO TK	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
AUD RNG (0)	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
AUD RNG (1)	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X
AUD RNG (2)	* TTT.T	XXXXX	XXX.X	XXX.X	XXX	XXX.X

* % MISC IA = TTT.T MISC IA = XXXXX O+I PC = XXXXX

CALL PROC REGS	%OCC	%OFL	PC	HT (SEC)	NCI
DET AMA	XXX.X	XXX.X	XXXXX	XXX.X	XXX
CALL FWD	XXX.X	XXX.X	XXXXX	XXX.X	XXX
OPER TRK	XXX.X	XXX.X	XXXXX	XXX.X	XXX
HOTEL	XXX.X	XXX.X	XXXXX	XXX.X	XXX
REV CALL	XXX.X	XXX.X	XXXXX	XXX.X	XXX
BL SR	XXX.X	XXX.X	XXXXX	XXX.X	XXX
AMA ANNEX	XXX.X	XXX.X	XXXXX	XXX.X	XXX

XMTR TIMEOUTS	%TO	TO
MF	XXX.X	XXXXX
DP	XXX.X	XXXXX
RP	XXX.X	XXXXX
PCI	XXX.X	XXXXX

Note: The T indicates that the report item has an associated threshold value. The X represents a non-threshold number.

Fig. 2—Ineffective Attempt Service Exception Report Format (No. 1 ESS Switch Host) (Sheet 2 of 2) (5.16, 5.21)

```
                    ***LOAD SERVICE SUMMARY***

ENTITY:XXXXXXXXXXX   DATE:XX/XX/XX     TIME:XX:XX

                    *  OFFICE LOAD VOLUMES  *

          PC       %                    PC      %

IAO      XXXXX  XXX.X     INC TERM   XXXXX  XXX.X
OROUT    XXXXX  XXX.X     TAN        XXXXX  XXX.X
PD       XXXXX  XXX.X
ORIG     XXXXX  XXX.X     INC        XXXXX  XXX.X
O+I      XXXXX

E-E CYCLES = XXXXXX
((E-E CYCLES AT 0 LOAD)-(E-E CYCLES))/(O+I PC) = X.XXX
LN SCN CMP = XXXXXX

A LK CCS = XXXXXX   SUB HT = XXXXXX   LKS MB = XXXXXX

                    *  TOTAL RSS LOAD VOLUMES  *

TOTAL RSS  PC     %                  TOTAL RSS
ORIG     XXXXX  XXX.X                CHANNEL CCS = XXXXX
INC      XXXXX  XXX.X                LN-LN USAGE = XXXXXXX
O+I      XXXXX
IAO      XXXXX  XXX.X
OUT      XXXXX  XXX.X

                    *  INEFFECTIVE ATTEMPTS  *

             PC     %                PC     %                  PC     %
IA         XXXXX  XXX.X  OROUT ML XXXXX  XXX.X  IFFM        XXXXX  XXX.X
MISC IA    XXXXX  XXX.X  INC ML   XXXXX  XXX.X  TAN ML      XXXXX  XXX.X
NC         XXXXX  XXX.X  IAO OFL  XXXXX  XXX.X  INC TERM ML XXXXX  XXX.X
XMTR OFL   XXXXX  XXX.X  MISC OFL XXXXX  XXX.X  RSS FAIL    XXXXX  XXX.X
```

Fig. 3—Load Service Summary Report (No. 1 ESS Switch Host) (Sheet 1 of 2)

```
                    *** LOAD SERVICE SUMMARY *** (Contd)

          * DIAL TONE RESULTS *                 * RADR RESULTS *

          TSTS  DLYS   %                        TSTS  DLYS   %

DP        XXXX  XXXX  XXX.X          MF        XXXX  XXXX  XXX.X
TT        XXXX  XXXX  XXX.X          DP        XXXX  XXXX  XXX.X
                                      RP        XXXX  XXXX  XXX.X
TOTAL     XXXX  XXXX  XXX.X          TOTAL     XXXX  XXXX  XXX.X


BLK DT PC = XXXXX

                          * NETWORK MANAGEMENT  *

                PC                                      PC

PREPG CONT    XXXXX                   EMG ANN1    XXXXX
FLEX CONT     XXXXX                   EMG ANN2    XXXXX
CODE BLOCK    XXXXX                   NC ANN      XXXXX
```

```
RSS ID XXXXXXXXXXXX


    * OFFICE LOAD VOLUMES *       * DIAL TONE RESULTS *

          PC     %                    % DTD   AVG DLY

ORIG      XXXX   XXX.X        TT/DP   XXX.X   XXXX
INC       XXXX   XXX.X
O+I       XXXX
IAO       XXXX   XXX.X          * INEFFECTIVE ATTEMPTS *
OUT       XXXX   XXX.X

                               % INEFF ATT = XXX.X RSS CALL FAIL = XXXX
LN-LN USAGE = XXXX
CHANNEL CCS = XXXX
```

Fig. 3—Load Service Summary Report (No. 1 ESS Switch Host) (Sheet 2 of 2)