SWITCHING SYSTEMS MANAGEMENT

NO. 1 ELECTRONIC SWITCHING SYSTEM (2-WIRE)

ADMINISTRATION RESPONSIBILITIES

1. GENERAL

1.01 This section describes the administrative responsibilities of the district network manager-administration, network manager-administration, and network supervisor (both the service supervisor and the assignment supervisor) with regard to the No. 1 Electronic Switching System (ESS). If it is possible to set an interval in which each responsibility is to be executed the interval is mentioned (daily, weekly, annually). This section supplements Dial Facilities Management Practices, Division A, Sections 2 and 3.

1.02 When this section is reissued, this paragraph will contain the reason for reissue.

1.03 Two different network supervisor positions are outlined in this section. One position represents service responsibilities and the other represents assignment responsibilities. It is recommended that one network supervisor have both areas of responsibility but some organizations may assign each responsibility to a different network supervisor.

1.04 The responsibilities described in this section may differ somewhat in specific network administration organizations due to the geographic area served by the organization, the type of area served (metropolitan or suburban), and whether administrators are responsbile for both electromechanical and ESS machines or for ESS machines only.

2. THE EVOLUTION OF NETWORK ADMINISTRATION

2.01 Historically, the traffic department has had the responsibility for dial equipment. Before dial calling became available, the traffic department was responsible for only operator services and switchboard administration.

2.02 In the early stages of dial switching, the dial administration group was primarily a line and number assignment group. Later, dial administration and traffic engineering assumed joint responsibility for capacity setting and, along with it, assumed responsibility for load balance and service results.

2.03 With the introduction of centrex service in the 1960s, customers who had been previously served by PBX equipment began to move into the central office and the dial administrator's job became more complex. Additional features such as TOUCH-TONE® and wide area telephone service (WATS) were subsequently introduced and the complexity of the dial administrator's job again increased.

2.04 One of the greatest impacts on the dial administrator's job resulted from the introduction of electronic switching and stored program control. No. 1 ESS became prominent in the early 1970s and the number of possible customer services became virtually unlimited. Programming changes could produce new features with very few or no hardware modifications.

2.05 Stored program control also enabled designers to give the administrator more control in directing traffic over the switching network through network management features.

2.06 Under the present American Telephone and Telegraph Company (AT&TCo) organizational plan, all responsibilities related to the switching network have been consolidated under the network services department. *Under this organization, dial administration is now called network administration.*

3. RESPONSIBILITIES

3.01 The network administration organization's responsibilities fall into seven major categories. The categories are:

- Data administration

- Equipment utilization

- Office status evaluation

- Service problem analysis and corrective action

- Transition management

- Line and trunk assignment

- Personnel administration.

3.02 Each area of responsibility listed in 3.01 is expanded into specific job requirements and is discussed in 3.03 through 3.134. Summaries of these responsibilities are given in Tables A through G.

DATA ADMINISTRATION

3.03 *District:* The district network manager-administration is responsible for collecting and validating data on load and service results and for providing data in response to special study requests.

> *Note:* Other districts may be given control of certain traffic schedules or areas of schedules to assign as they wish. For example, traffic business services may have a group of registers on the H-schedule which they may assign for centrex studies. If there is a trunk administration group separate from network administration, they may assign the entire C-schedule.

A. Traffic Register Assignments

Network Manager-Administration

3.04 *Monitors all schedules to insure that consistent and adequate measurements are collected.* The network manager determines the measurements that must be collected for each office. The network manager reviews changes in traffic measurements available and plans traffic schedules for new offices and for offices with planned generic updates. When data studies are requested by groups outside of network administration, the network manager determines the feasibility of the request and determines which measurements must be assigned.

Network Supervisor-Service

3.05 *Assigns registers for new offices.*
The network supervisor completes the ESS 1400 form for new offices as outlined in the translation guide TG-1A.

3.06 *Assigns registers for customer groups as they come into service.* Certain measurements are for specific centrex groups, multiline hunt groups, etc and are required only as the groups are put into service.

3.07 *Verifies traffic registers.* The network supervisor verifies that translations accurately record traffic register assignments. The network supervisor requests that maintenance perform a T-read (translation-read) and analyzes the results (annually and after major register additions or rearrangements). In centrex-8 (CTX-8) and later generics, traffic register assignments can be verified from the network administration teletypewriter using the TRF-VFY input message.

B. Scheduling

Network Manager-Administration

3.08 *Monitors all data collection to insure that data are collected according to schedule.* The network manager determines the hours during which data are to be collected. When requests are made for special studies, the network manager determines when the study can be performed and the changes, if any, that must be made in the normal collection schedule.

Network Supervisor-Service

3.09 *Maintains traffic map.* The network supervisor makes all scheduling assignments to the traffic map. The traffic map is the area of call store which sets the collection and print hours of all traffic schedules. It also sets the start and stop times of the automatic line insulation test (ALIT) and the automatic trunk progression test. Since it is maintained in call store, it is vulnerable to phase initializations. The network supervisor must see that the map is checked periodically to insure its accuracy.

3.10 *Generates special data printouts.* It may become necessary to generate an unscheduled printout of a particular traffic schedule either for use in a special study or to monitor traffic conditions in a nonbusy hour. The printout can be generated either by a special teletypewriter request or by changing the traffic map.

C. Data Processing

Network Supervisor-Service

3.11 *Logs TØC01 and TØC02 messages as they occur and analyzes them.* TØC01 and TØC02 messages will usually give indications of adverse call conditions or changes in traffic controls. The network supervisor should contact maintenance to determine the cause of the message.

3.12 *Summarizes TC-15 and DA-15 data.* The TC-15 data must be collected in order to determine processor capacity. The DA-15 data are collected for special studies (daily).

3.13 *Transmits busy hour H-schedule and W-schedule to PATROL and analyzes exception report.* In order to maintain valid data on the Program for Administrative Traffic Reports On-Line (PATROL), it is necessary to analyze the exception report returned and remove any data judged by the network supervisor to be out of range (H-schedule, daily; W-schedule, weekly).

3.14 Logging TØC0 messages, summarizing TC-15 and DA-15 data, and transmitting H- and W-schedule data to PATROL are all functions which could be assigned to a clerk.

D. Data Validation

Network Manager-Administration

3.15 *Establishes criteria for valid data.* The network manager establishes the standards to be used to judge whether data are valid.

Network Supervisor-Service

3.16 *Matches data against criteria.* The network supervisor compares data collected against criteria set by the network manager and discards data judged to be invalid (daily).

E. PATROL Administration

Network Manager-Administration

3.17 Sets limits for flagged data. Flagging is a feature of PATROL which enables the holding time of each component to be set between an upper and a lower limit. If the actual holding time for any component exceeds either limit, it is listed on the exception report. The network manager should review holding times with the network supervisor to determine if any limits should be readjusted (monthly).

3.18 Controls PATROL vendor costs. Guidelines for reasonable PATROL costs are outlined in General Letter 74-01-073. The network manager should compare vendor bills against the guidelines (monthly).

Network Supervisor-Service

3.19 Establishes office description file. Since the office description file should not be changed during a busy season once it has been established, careful selection must be made of measurements placed on PATROL. The network design engineer is a user of PATROL data and should be consulted before the office description file is established (before recycling PATROL files and for new offices).

3.20 Maintains accurate main station counts. Since data on PATROL are divided by the quantity of main stations of different types which are in service during the period of collection, it is important that main station counts on PATROL be accurate. The network supervisor updates main station counts on PATROL whenever the quantity of main stations of a particular type increases by an amount which would affect the accuracy of PATROL data.

3.21 Maintains accurate circuits-in-service counts. The network supervisor changes the number of circuits on PATROL records whenever the number of service circuits or trunks measured on PATROL increases.

3.22 Maintains PATROL newletters and lessons. The network supervisor should be on the mailing list for PATROL newsletters. The network supervisor should request a printout of the PATROL lessons index and review it to verify whether the file of lessons is up-to-date (monthly).

3.23 Verifies accuracy of PATROL assignments. The network supervisor should review register assignments on the H-schedule and equipment and memory quantities in each office to insure that they correspond to the assignments on the office description file (after recycling PATROL and after major register additions or rearrangements).

F. System Initialization

Network Manager-Administration

3.24 Establishes procedures to reestablish traffic measurements in the event of a phase. Phase activity may erase the traffic map, register assignments in recent change, and holding registers. Registers in all schedules may be set to zero during an initialization and therefore yield inaccurate readings. The network manager must establish procedures to be followed in the event of a phase to determine the extent of the initialization and the corrective action to take. If a phase occurs, the network manager should determine if the established procedure is followed.

Network Supervisor-Service

3.25 Monitors network administration teletypewriter for indication of phase activity and follows procedures to reestablish traffic measurements in the event of a phase. A T0C01 or T0C02 message received over the network teletypewriter should be brought to the attention of the network supervisor immediately. If the message shows indication of a phase which may affect traffic measurements, the network supervisor should follow procedures to reestablish traffic measurements.

G. Documentation

3.26 Detailed information on traffic register assignments, scheduling, PATROL, and data validation can be found in Dial Facilities Management Practices, Division H, Sections 6i and 6j. Information on the network teletypewriter can be found in Dial Facilities Management Practices, Division H, Section 6d(4).

EQUIPMENT UTILIZATION

3.27 *District:* The district network manager-administration is responsible for optimum loading, balancing, and utilizing of installed equipment. The network manager sets results objectives, issues notice of equipment shortages to network design, and provides requirements for memory rearrangements to engineering.

A. Loading Plans

Network Manager-Administration

3.28 *Reviews and approves loading plans.* The network supervisor-service submits loading plans to the network manager for approval. If the loading plan is for a multientity wire center with units of electromechanical equipment and if electromechanical switching is the responsibility of another network manager, that manager should be consulted for concurrence on the loading plan (annually).

3.29 *Reviews actual loading to insure adherence to plan.* The network manager should review assignment records, assignment lists, and orders worked to insure adherence to the loading plan (monthly).

Network Supervisor-Service

3.30 *Prepares detailed loading plan.* If responsibilities for entities within the wire center are shared with another network supervisor, that supervisor should be consulted when preparing the loading plan (annually).

3.31 *Advises network supervisor-assignment on implementation of loading plan.* The network supervisor-service must cover the loading plan with the network supervisor-assignment upon approval of the plan by the network manager.

Network Supervisor-Assignment

3.32 *Implements loading plan.* The network supervisor-assignment instructs the assignment clerical force to make assignments following the loading plan and monitors assignments to insure that the loading plan is followed.

B. Busy Hour and Busy Season Determination

Network Manager-Administration

3.33 *Reviews busy hour study.* The network supervisor-service submits the busy hour study to the network manager. The network manager should check the study for reasonableness and to insure that component busy hours and factors have been determined. The network manager also determines the hours that should be maintained on PATROL (semiannually).

Network Supervisor-Service

3.34 *Performs busy hour study.* The network supervisor is responsible for making a study to determine the office busy hour based on network CCS load, the busy hour based on the number of calls processed, the busy hour based on dial tone speed, and the busy hour based on incoming matching loss. The results of the study are submitted to the network manager for review (semiannually).

3.35 *Determines component busy hours and factors.* Each component in the office (service circuits, call store registers, signal processors, etc) may have a busy hour different from that of the entire office. If the busy hour is different and cannot be studied easily, a factor relating the load during the component busy hour to the load during the office busy hour should be developed (annually).

3.36 *Confirms busy season.* The network supervisor studies monthly data on PATROL to determine if the three busiest months listed are the same as those in the historical busy season of the office. If they are not the same, the network supervisor determines if the historical busy season of the office should be changed (annually).

C. Load Balance

Network Manager-Administration

3.37 *Reports load balance index.* The network manager reports the load balance index for each office to the district network manager (monthly).

3.38 *Sets procedures to improve index.* The network manager reviews load conditions

and determines procedures for corrective action. If line transfers are necessary, the network manager coordinates with plant on scheduling the transfers.

Network Supervisor-Service

3.39 *Computes load balance index.* The network supervisor establishes the necessary side hour in addition to the busy hour and performs a 10-hour concentrator study (monthly).

3.40 *Reviews load balance procedures with network supervisor-assignment.* The network supervisor-service must review line assignments and transfers necessary for improved load balance with the network supervisor-assignment (monthly).

Network Supervisor-Assignment

3.41 *Implements assignments for load balance.* The network supervisor-assignment instructs the line assignment clerical force to make assignments following the plan for load balance as discussed with the network supervisor-service.

D. Service Circuit Administration

Network Manager

3.42 *Reviews service circuit specifications in traffic orders.* All traffic orders written for both new offices and additions should be reviewed to determine if holding times and call rates agree with actual data and to determine whether service circuits are adequately provided.

3.43 *Establishes parameters for service circuits.* The network manager specifies load levels which could cause service problems in specific service circuit groups and instructs the network supervisor-service to monitor service circuit groups for potentially hazardous loads (annually).

Network Supervisor-Service

3.44 *Compares actual load data with parameters set by network manager.* The network administrator should not only compare present load data with service parameters, but should also compare trends to service parameters and analyze the trends for potential service problems (weekly).

3.45 *Balances customer digit receiver (CDR) groups between dial pulse, TOUCH-TONE, and overflow.* The network supervisor computes the proper size for each CDR group using actual load data and TOUCH-TONE forecasts and issues orders to have groups reconfigured if necessary (semiannually).

3.46 *Administers tone and announcement circuits.* The network supervisor checks tones and announcements to insure that calls are given proper routing to tones and announcements. The network supervisor also checks to determine if all necessary announcements are available in the office and to insure that announcements which are not in use are not retained (semiannually).

E. Memory Administration

Network Manager

3.47 *Reviews memory specifications in traffic orders.* All traffic orders written for both new offices and additions should be reviewed to insure that adequate program store and call store space is provided, that call store registers are properly sized, that holding time and call rate assumptions agree with actual data, and that spare call store space is assigned to sensitive register areas.

3.48 *Establishes parameters for call store traffic registers.* The network manager specifies load levels which could cause service problems in specific call store traffic registers and instructs the network supervisor-service to monitor registers for potentially hazardous loads (annually).

3.49 *Recommends TAA/TRIMS/TRR run, when necessary, to district network manager.* The translation area analysis (TAA), the translation repack to implement memory savings (TRIMS), and the translation retrofit and repack (TRR) programs are programs which can be performed by Western Electric to reconfigure translations in such a manner that additional program store words are made available for use. The network supervisor-service will present calculations showing the need for a TAA/TRIMS/TRR run to the network manager for review. If the network manager concurs, the network manager will make a recommendation to the district network manager for a TAA/TRIMS/TRR run.

3.50 *Coordinates TRIMS run with network design engineer.* The network manager provides information necessary for the completion of the TRIMS E-8086 questionaire to the network design engineer. The network manager coordinates TRIMS implementation with the network design engineer (whenever TRIMS is required).

Network Supervisor-Service

3.51 *Compares actual load data with parameters set by network manager.* The network supervisor should review load data on call store traffic registers and compare these data with service parameters. The network supervisor should also review load trends for any potentially adverse effects (weekly).

3.52 *Monitors utilization of program store space.* The network supervisor takes the present program store word usage, the present spare words (both in link lists and in whole words), and the present number of main stations in service and finds the efficiency of present program store word usage (monthly).

3.53 *Establishes the need for TAA/TRIMS/TRR runs.* As a result of the monthly analysis of program store space, the network supervisor may find the need for a memory rearrangement. The network supervisor makes a comparison to find if a TAA/TRIMS/TRR run would be justified. If a run would be justified, the network supervisor presents the calculations to the network manager for review.

3.54 *Establishes abbreviated line class codes.* For new offices, the network supervisor must prepare codes which represent major customer classes and leave a number of codes spare for growth. The network supervisor-service should consult the network supervisor-assignment when determining which codes will be abbreviated. New codes are assigned as they are needed. Codes are initially assigned on the ESS 1502 form.

3.55 *Monitors abbreviated line class code utilization.* The service supervisor takes one week of service order activity and matches the assignments against existing abbreviated line class codes. A minimum of 80 percent of the assignments should match abbreviated codes. If this level of abbreviation is not reached, the

network supervisor must determine if additional line class codes should be abbreviated (semiannually).

3.56 *Establishes supplemental abbreviated line class codes.* Supplemental abbreviated line class codes are used for centrex translations. These codes must be prepared before specific centrex groups are translated. Supplemental codes are initially assigned on the ESS 1503 form.

F. Documentation

3.57 Information on preparing loading plans can be found in Dial Facilities Management Practices, Division H, Section 6h(3); busy hour determination procedures may be found in Division H, Sections 1c(2) and 6i; load balancing procedures may be found in Division H, Sections 1b(4) and 6g; load balance index plan may be found in Division A, Section 5b; and service circuit administration and memory administration may be found in Division H, Sections 6h(1) and 6h(2).

OFFICE STATUS EVALUATION

3.58 *District:* The district network manager-administration and network design are jointly responsible for establishing machine capacities, notifying other districts of changes in capacity, and insuring that adequate equipment is scheduled to maintain service criteria.

A. Capacity Setting

Network Manager-Administration

3.59 *Reviews capacity studies.* The network manager is responsible for reviewing capacity studies prepared by the network supervisor and determining whether valid limiting factors are used (annually).

Network Supervisor-Service

3.60 *Sets office capacity.* The network supervisor determines the main station capacity of each component of the office, whether the component limits all classes of service or only specific classes, and the capacity for the entire office, including the real-time capacity of central control.

B. Load-Service Relations

Network Manager-Administration

3.61 *Reviews load-service relations.* The network manager reviews load-service relations prepared by the network supervisor-service. If any changes in capacity result from the new load-service relations, the network manager negotiates the change with the network manager-design (annually).

Network Supervisor-Service

3.62 *Develops load-service relations.* The network supervisor develops load-service relations such as E-to-E visitation rate versus calls-per-quarter-hour for central control; dial tone speed versus calls-per-hour for CDRs; and incoming matching loss versus load for multifrequency, revertive pulse, and dial pulse receiver groups (annually).

C. Capacity Management

Network Manager-Administration

3.63 *Negotiates growth jobs with plant extension.* When the need becomes apparent for additional equipment in an office in order to maintain service or to meet demand, the network manager informs the district network manager who will make written notification to plant extension. The network manager will negotiate a schedule with plant extension.

3.64 *Establishes plan for changing customer makeup of an office.* When it becomes necessary to change the customer makeup of an office for capacity reasons either by deloading, transfers, or other means, the network manager establishes the plan. The network manager consults the plant extension engineer and the customer services manager in establishing the plan.

3.65 *"Freezes" growth when necessary.* It is the network manager's responsibility to stop the issuance of service orders in an office (freeze an office) either for a particular class of service or all main stations when existing service would be adversely affected by additional growth. The network manager must also notify other districts of the freeze.

Network Supervisor-Service

3.66 *Determines equipment shortages.* The network supervisor takes actual load data and forecasted main station growth for each office and determines if any components will exceed capacity. The network supervisor notifies the network manager of any equipment shortages (at least annually).

3.67 *Determines effect of commercial forecast on office capacity.* The network supervisor reviews each new commercial forecast when issued and determines if changes listed in main station growth in any particular class would exceed office capacity (whenever new commercial forecast is issued).

3.68 *Studies the effect of area transfers on capacity.* Upon the transfer of a large number of main stations to the ESS office, the network supervisor studies load data and service indicators of the office. If any condition adverse to service is found, it is reported to the network manager.

3.69 *Issues notice of potential service circuit or memory shortages.* The network supervisor reviews monthly data and notifies the network manager of any potential shortages based on data trends (monthly).

SERVICE PROBLEM ANALYSIS AND CORRECTIVE ACTION

3.70 *District:* The district network manager-administration is responsible for identifying and resolving all problems affecting service and for coordinating all actions necessary to protect service during abnormal traffic conditions.

A. Service Indicators

Network Manager-Administration

3.71 *Develops service parameters for use in a "quick look" for service problems.* The network manager develops parameters for components which would indicate service problems. These parameters are used by the network supervisor-service.

Network Supervisor-Service

3.72 *Reviews all TØCO1 and TØCO2 messages.* The network supervisor instructs the personnel responsible for network administration teletypewriter operations to deliver all TØC01 and TØC02 messages as they appear. The network supervisor analyzes the message for adverse service indicators and follows procedure for corrective action.

3.73 *Reviews data for service problems.* The network supervisor reviews load service data for indications of service problems, using the parameters established by the network manager (daily).

B. Traffic Controls

Network Manager-Administration

3.74 *Insures that traffic controls can be properly implemented.* The network manager must know the local operating company's policy on activating line load control and emergency manual line service and must insure that these controls can be activated at the proper time. The network manager must also insure that the parameters for traffic controls are set as recommended. These include the percentage of lines which is essential and the status of line load control after a phase.

Network Supervisor-Service

3.75 *Administers traffic control.* The network supervisor is responsible for initiating specific traffic controls when conditions set by the local operating company are met.

C. Abnormal Load Conditions

Network Manager-Administration

3.76 *Coordinates service protection during abnormal conditions.* The network manager is responsible for coordinating activities related to service protection during abnormal conditions such as telethons, elections, work stoppages, and disasters. The network manager coordinates efforts with the person responsible for network management controls.

Network Supervisor-Service

3.77 *Monitors traffic data during abnormal conditions.* The network supervisor monitors load and service data during abnormal conditions to insure the effective administration of service protection activities.

D. System Initializations

Network Manager-Administration

3.78 *Reports all phase actions.* The network manager reports to the district network manager all phase actions which occur. There should be an intergroup committee which reviews system initializations and the network manager should be a member of this committee.

Network Supervisor-Service

3.79 *Plans corrective action.* At times it is necessary for the maintenance force to manually begin a phase action. The network supervisor must know when the manual phase is to occur, must know the effects of the phase, and must plan to reinstate measurements and controls as warranted by the level of the phase. The network supervisor should ask to be notified by the maintenance force whenever a phase is planned. When a phase is begun spontaneously by the ESS, the network supervisor must reinstate measurements and controls as warranted by the level of the phase.

3.80 *Reports phases to network manager.* The network supervisor reports the occurrence of a phase, its level, its effects, and the corrective action taken to the network manager.

E. Equipment Shortages

Network Manager-Administration

3.81 *Develops relief plan.* If an office reaches its capacity before the next planned engineering job, the network manager develops a plan to relieve the office of main station load by advancing installation jobs or by other means.

Network Supervisor-Service

3.82 *Coordinates relief plan involving common equipment.* The network

supervisor-service coordinates any relief plan arrangements involving service circuits, call store registers, or other common equipment.

Network Supervisor-Assignment

3.83 *Coordinates relief plan involving line equipment.* The network supervisor-assignment coordinates any relief plan arrangements involving line transfers, a class-of-service freeze, or other line assignment procedures.

F. References

3.84 A detailed description of service indicators can be found in Dial Facilities Management Practices Division H, Section 6k; traffic controls can be found in Division H, Section 6m; traffic measurements can be found in Division H, Section 6i; and capacity studies can be found in Division H, Section 6h(1).

TRANSITION MANAGEMENT

3.85 *District:* The district network manager-administration is responsible for the protection of service during an office transition, for the efficient utilization of new equipment, and for insuring the accuracy of parameters and line and service circuit translations. An office transition includes translations repacks and parameter runs as well as equipment rearrangements.

A. Method of Procedure (MOP)

Network Manager-Administration

3.86 *Approves the MOP.* The network manager reviews the MOP, insures that procedures are adequate for protection of service, and approves the MOP for network administration.

Network Supervisor-Service

3.87 *Participates in the preparation of the MOP.* The network supervisor is the network administration representative on the MOP committee.

B. Junctor Rearrangement

Network Manager-Administration

3.88 *Advises network manager-design of need for intermediate junctor assignment program (JAP) when necessary.* It is sometimes impossible to change the junctor pattern of an office which is adding line switch frames or trunk switch frames to the final configuration without affecting service. When this is the case, the network manager informs the network manager-design of the need for intermediate junctor assignments and additional runs of the JAP.

Network Supervisor-Service

3.89 *Reviews JAP.* The network supervisor examines the JAP run when it becomes available and determines if the configuration is sufficient for the office addition. The network supervisor also determines if the office can grow to the final junctor arrangement without adverse service effects or if intermediate junctor configurations are necessary. If intermediate junctor configurations are necessary, the network supervisor informs the network manager.

C. Memory Rearrangements

Network Manager-Administration

3.90 *Insures the accuracy of parameters.* The network manager is responsible for insuring that parameters are set for the proper number of memory registers and service circuits and for notifying network manager-design of any errors in parameters.

Network Supervisor-Service

3.91 *Inspects parameter set card values.* The network supervisor reviews the parameter data assembly (PDA) program when it becomes available and checks each set card to determine whether it accurately reflects office quantities. If there are any set card errors, the network manager is notified.

3.92 *Insures that test translations are removed after cutover.* There is an area of translations which is used for the testing of an office before cutover. After cutover, these translations are no longer used and, if left in, will

deprive program store of usable space. The network supervisor should insure that these translations are removed after cutover.

3.93 *Verifies service circuit translations.* The network supervisor must verify that all installed service circuits have been translated. This can be done by using the VFY-TKGN message from the network administration teletypewriter. The response to the message will be the number of trunks in the group specified.

D. Office Balance

Network Manager-Administration

3.94 *Establishes plan for load balance.* The network manager establishes a plan for load balance when new line switch frames or trunk switch frames are added to an existing office and when a new ESS office is replacing an existing switching unit.

Network Supervisor-Service

3.95 *Monitors load balance data.* The network supervisor monitors load balance data before, during, and after a cutover to insure that effective load balance is occurring.

E. References

3.96 Detailed information on MOP preparation can be found in Dial Facilities Management Practices Division H, Section 6n(1); junctor rearrangement can be found in Division H, Section 6n(2); parameters can be found in Division H, Section 6h(1); program store administration can be found in Division H, Section 6h(2); and load balance can be found in Division H, Section 6g.

LINE AND TRUNK ASSIGNMENT

3.97 *District:* The district network manager-administration is responsible for the assignment of lines and directory numbers and for keeping records of assigned line equipment, directory numbers, and associated features. In some organizations the district network manager is responsible for the assignment of trunks.

A. Office Transition

Network Manager-Administration

3.98 *Coordinates main station transfers.* The network manager is a member of the cutover committee and establishes the number of main stations which can be transferred and the time which will be required to perform necessary line translations.

3.99 *Coordinates business services customer additions.* The network manager is a member of the committee responsible for establishing a new business services customer group such as centrex, PBX-CO, or automatic call distribution (ACD). The network manager determines if adequate equipment is available for service. If there are equipment inadequacies, the network manager contacts the network design engineer.

Network Supervisor-Assignment

3.100 *Provides line translations for SLATTS.* A set of translations is required at a certain interval prior to cutover of a new office which represents the translation for certain lines and for all trunks. These translations are known as selected line and trunk translations (SLATTS). The network supervisor is responsible for submitting all line translations required for SLATTS. If network administration is responsible for trunk assignment, the network supervisor is also responsible for submitting all trunk translations required for SLATTS.

3.101 *Provides translation growth process (TGP) translations for large area transfers.* When large area transfers (approximately 4000 main stations or greater) are planned, the TGP program can be used to assemble line translations rather than working individual service orders. The network supervisor is responsible for preparing the necessary line translations for TGP.

3.102 *Oversees record-keeping for area transfers.* The network supervisor insures that a record is made and maintained of old and new line equipment and directory numbers and that the record is maintained as main stations are disconnected.

3.103 *Provides final line translations for cutover.* The network supervisor is

responsible for preparing all remaining line translations which were not submitted with SLATTS at a certain interval before cutover.

3.104 *Provides input for TRUST.* If network administration is responsible for trunk assignment, the network supervisor makes all input-form assignments necessary for the trunk update support technique (TRUST).

B. Essential Service

Network Manager-Administration

3.105 *Coordinates essential assignments with the commercial department.* The network manager receives a list of essential customers from commercial and sends commercial a list of customers who are not on their list but who are receiving essential service. This is done in order to identify truly essential customers (annually).

Network Supervisor-Assignment

3.106 *Reviews essential assignments.* The network supervisor reviews line assignments to insure that essential lines are properly identified and are assigned essential service (monthly).

C. Special Assignments

Network Manager-Administration

3.107 *Coordinates special service assignments with marketing and network maintenance.* For special services such as WATS, inward wide area telephone service (INWATS), common control switching arrangements (CCSA), etc, the network manager insures that the assignments are made as marketing specifies, if feasible, and that network maintenance makes all necessary hardware and software changes.

Network Supervisor-Assignment

3.108 *Administers no-test lines.* No-test lines are used to gain access to busy customer lines for testing purposes. No-test line assignments are made by the translation data assembly (TDA) program, but in some office configurations additional assignments must be made manually by the network supervisor. The network supervisor must also insure that directory numbers are not assigned to no-test lines.

3.109 *Administers dial tone delay alarm line.* The dial tone delay alarm is a device at the master control center (MCC) which initiates a bid for dial tone at a rate which can be set from one test every 20 seconds to one test every 60 seconds. The network supervisor must assign the dial tone delay alarm to essential service, give it a denied-terminating class of service, and routinely change the alarm line assignment in order to spread the equipment wear caused by the alarm.

3.110 *Administers MCC test lines.* Test lines associated with the MCC are assigned by the network supervisor on the ESS 1500B form. The network supervisor is responsible for insuring that MCC test line assignments are not changed.

3.111 *Administers service observing lines.* Lines for assignment are received from the service observing group and are assigned by the network supervisor according to procedures outlined in the Traffic Service Observing Practices.

3.112 *Reviews hunting arrangements.* The network supervisor examines assignments and corrects any inefficient hunting arrangements (hunt groups using directory number hunting when they should be using multiline hunting and vice versa) (monthly).

3.113 *Verifies intercept treatment.* The network supervisor should take a sample of lines which have been placed on intercept, call them, and see if they are routed to the proper treatment (monthly).

D. Record-Keeping

Network Manager-Administration

1.114 *Represents network administration in mechanized assignment operations.* If network administration uses a mechanized program for assignment record-keeping, whether it is the Computer System for Main Frame Operations (COSMOS) or a local operating company program, the network manager is responsible for interfacing with the group responsible for managing the program.

3.115 *Establishes procedure for disposing of old records.* The network manager is responsible for determining exactly when and in what manner old line assignment records should be destroyed.

Network Supervisor-Assignment

3.116 *Keeps a record of customer directory numbers, equipment, and features.* The network supervisor keeps a record of directory numbers, their associated line equipment, and miscellaneous equipment (such as make-busy keys and call indicator lamps) as well as of associated features such as TOUCH-TONE and custom calling features. The record may be either manual or a mechanized program.

E. Trunk Administration

Network Manager-Administration

3.117 *Monitors trunk service.* Trunking responsibilities may vary from company to company, but at the very minimum the network manager must be aware of trunk provisioning on all final and tandem groups and must monitor service on the groups.

Network Supervisor-Service

3.118 *Monitors trunk provisioning.* The network supervisor must insure that adequate trunks have been provided on all final and tandem groups to meet service objectives. The network supervisor must monitor the quantity of trunks and maintenance levels and must be aware of overdue trunks, trunk shortages, and trunk outage on these groups.

F. Line Capacity

Network Manager-Administration

3.119 *Reviews capacity statement for lines.* The network manager reviews the capacity statement submitted by the network supervisor-assignment and determines if figures used are accurate (annually).

3.120 *Receives reservation requests from commercial and marketing.* The network manager receives requests for line reservations for customer groups from commercial and marketing and determines if the lines can be reserved.

Network Supervisor-Assignment

3.121 *Establishes main station capacity based on lines.* The network supervisor computes intercept requirements, administrative factors, and percentage of usable lines and develops the main station capacity based on lines (annually).

3.122 *Coordinates with plant assignment supervisor to maintain party line fill.* The network supervisor reviews assignment records and provides the plant assignment supervisor with a list of party line customers who are receiving private service (semiannually).

3.123 *Coordinates assignment activity with plant assignment supervisor.* The network supervisor discusses the adequacy of assignments, arrangements for delivery, and timely return of used assignments with the plant assignment supervisor on a continuing basis.

3.124 *Reviews records for overdue reservations.* The network supervisor reviews assignment records for reservations which have not been used and consults the person in commercial or marketing who made the reservation concerning its status (monthly).

G. Documentation

3.125 Detailed information on SLATTS, TGP, and TRUST can be found in the translation guide TG-1A; no-test, dial tone delay alarm, and MCC test line administration can be found in Dial Facilities Management Practices Division H, Section 6d(3); capacity setting can be found in Division H, Section 6h(1).

PERSONNEL ADMINISTRATION

3.126 *District:* The district network manager-administration is responsible for establishing job descriptions and responsibilities, evaluating job performance, and administering the pay treatment of employees under his or her supervision. The scheduling of training necessary for the administration of an ESS office and the responsibility for handling grievances and maintaining good relations with the union are also functions of the district level of network management.

A. Job Performance Evaluation

Network Manager-Administration

3.127 *Evaluates job performance of network supervisors.* Following local operating company practices, the network manager completes a written job evaluation of each network supervisor, including a job rating. Upon approval of the evaluation, the network manager contacts each network supervisor individually concerning his or her evaluation.

Network Supervisor-Service and Assignment

3.128 *Evaluates job performance of all reporting personnel.* Following local operating company practices, the network supervisors complete written job evaluations of all reporting personnel (line assignment clerks, data clerks, etc), including a job rating. Upon approval of the evaluation, the network supervisors contact their personnel individually concerning their evaluations.

B. Pay Treatment

Network Manager-Administration

3.129 *Administers pay treatment for network supervisors.* The network manager insures that pay increases are applied to network supervisors at intervals specified by local operating company practices.

Network Supervisor-Service and Assignment

3.130 *Administers pay treatment for reporting personnel.* The network supervisor applies pay increases to reporting personnel based upon local operating company policy and agreement.

C. Training

Network Manager-Administration

3.131 *Arranges necessary training for network supervisors.* Due to the demands of administering an ESS office, it is critical that the network administrator have a good working knowledge of ESS. The network manager is responsible for evaluating the training needs of the network supervisor. Management training is available at both local operating company schools and at the Bell System Center for Technical Education at Lisle, Illinois. The network supervisor with no previous training in ESS should take a method-of-operation course, an ESS network administration course, and a translations course (or the equivalents).

Network Supervisor-Service and Assignment

3.132 *Arranges necessary training for reporting personnel.* The assignment clerks should have local company training available to them. The network supervisor must insure that the training adequately enables the clerical force to carry out their duties.

D. Grievances and Union Relations

Network Manager-Administration

3.133 *Deals with grievances according to union contract and maintains good relations with union representatives.* The network manager follows the union contract in the event of a grievance. The network manager should strive to maintain good relations with union representatives.

Network Supervisor-Service and Assignment

3.134 *Deals with grievances according to union contract and maintains good relations with union representatives.* If a grievance is filed, it would probably necessitate some action on the part of the network supervisor. The network supervisor should avoid any action which would unnecessarily create grounds for the grievance, but if a grievance should occur, the network supervisor should follow the procedures specified in the union contract in resolving it. The network supervisor should strive to maintain good relations with union representatives.

4. INTERGROUP RELATIONS

NETWORK DESIGN ENGINEER

4.01 *Traffic order review.* Whenever the network design engineer prepares a traffic order for either a new ESS office or an addition to an existing office, the network manager and the network supervisor-service review the order in detail. They either concur with the equipment specifications or make recommendations for changes.

4.02 *Capacity meetings.* The network design engineer participates in the annual meeting in which network administration presents capacity computations. The network design engineer reviews the capacity computations for each office and either concurs or makes recommendations for changes.

4.03 *Equipment shortages.* When an equipment shortage which may impair service is identified, the network design engineer is notified. The network design engineer will decide whether a special traffic order must be written or if the shortage will be alleviated on a next-job basis.

NETWORK MAINTENANCE SUPERVISOR

4.04 *Technical problems.* The network maintenance supervisor is consulted when the network administrator suspects a hardware or software problem. The maintenance supervisor will identify the problem and resolve it if possible. The maintenance supervisor may call upon the maintenance engineer and the network design engineer for assistance.

4.05 *Traffic schedule recent changes.* Since recent change messages which alter the assignment of traffic registers can only be inputted from the maintenance teletypewriter, all such messages must be sent to the network maintenance supervisor for execution.

4.06 *Centrex cutovers.* The network maintenance supervisor may have the responsibility for all translations and ESS equipment necessary for the cutover of a centrex group. The network administrator must be aware of centrex cutovers in order to insure equipment availability and to update data records, including abbreviated line class codes. The network administrator should work closely with the maintenance supervisor during a centrex cutover.

PLANT EXTENSION ENGINEER

4.07 *Office planning.* The plant extension engineer is responsible for planning office growth and for deciding when a new control group is necessary. The decisions related to office growth are made based on capacity calculations of the network administrator. The network administrator works closely with the plant extension engineer in making optimum use of available office capacity.

4.08 *Loading plans.* The plant extension engineer consults the network administrator when planning area transfers, deloading or loading offices, or otherwise changing the composition of offices. The network administrator should review plans for any possible impact on service and modify loading plans if necessary.

SERVICE ORDER SUPERVISOR

4.09 *Assignment lists.* The network supervisor-assignment sends the service order supervisor lists of line equipment numbers and directory numbers for assignment. The network supervisor and the service order supervisor must work together to insure that assignments are made which support the load balance plan for each office. The network supervisor implements controls of assignment lists.

4.10 *Main frame management.* When it becomes necessary to work service orders for frame transfers in order to achieve load balance, the service order supervisor is consulted by the network supervisor-assignment. Together, they set schedules for completing all necessary service orders. The network supervisor also provides assistance to the service order supervisor in achieving short jumper assignments.

5. TRAINING AND QUALIFICATIONS OF INDIVIDUALS ENTERING NETWORK ADMINISTRATION MANAGEMENT

5.01 As mentioned earlier in this section, historically network administration was simply a line and number assignment group. Managers and supervisors primarily had clerical backgrounds.

5.02 New services such as centrex, CCSA, and WATS were added and the complexity of the administration job increased. ESS accelerated the rate at which new services are developed.

5.03 As the complexity of the job increased, the technical and managerial skills required to do the job also increased. Today, a person in a network administration management position with responsibility for ESS offices needs a good working knowledge of ESS.

5.04 Personnel in network design engineering and network maintenance should be considered for jobs in network administration. However, these areas are not necessarily exclusive sources of management personnel. College graduates would be able to move directly into network administration positions with a properly prepared training course.

5.05 Lateral transfers and interdepartmental promotions should be encouraged and readily made.

TABLE A

DATA ADMINISTRATION

District: The district network manager is responsible for collecting and validating data on load and service results and for providing data in response to special study requests.

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE	
	Network Manager — Administration	Network Supervisor — Service
Traffic Register Assignments	Monitors all scheduled to insure that consistent and adequate measurements are collected.	Assigns registers for new offices. Assigns registers for customer groups as they come into service. Verifies traffic registers.
Scheduling	Monitors all data collection to insure that data are collected according to schedule.	Maintains traffic map. Generates special data printouts.
Data Processing		Logs TØC01 and TØC02 messages as they occur and analyzes them. Summarizes TC-15 and DA-15 data. Transmits busy hour H-Schedule to and W-Schedule to PATROL and analyzes exception report.
Data Validation	Establishes criteria for valid data.	Matches data against criteria.
PATROL Administration	Sets limits for flagged data. Controls PATROL vendor costs.	Establishes office description file. Maintains accurate main station counts. Maintains accurate circuits-in-service counts. Maintains PATROL newsletters and lessons. Verifies accuracy of PATROL register assignments.
System Initialization	Establishes procedures to reestablish traffic measurements in the event of a phase.	Monitors network administration teletypewriter for indication of phase activity and follows procedures to reestablish traffic measurements in the event of a phase.

TABLE B

EQUIPMENT UTILIZATION

District: The district network manager is responsible for optimum loading, balancing, and utilization of installed equipment. The network manager sets objectives for dial indexes, issues notice of equipment shortages to network design, and provides requirements for rearrangements to engineering.

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE		
	Network Manager — Administration	Network Supervisor — Service	Network Supervisor — Assignment
Loading Plans	Reviews and approves loading plans. Reviews actual loading to insure adherence to plan.	Prepared detailed loading plan. Advises network supervisor — assignment on implementation of loading plan.	Implements loading plan.
Busy Hour and Busy Season Determination	Reviews busy hour study.	Performs busy hour study. Determines component busy hours and factors. Confirms busy season.	
Load Balance	Reports load balance index. Sets procedures to improve index.	Computes load balance index. Reviews load balance procedures with network supervisor — assignment.	Implements assignments for load balance.
Service Circuit Administration	Reviews service circuit specifications in traffic orders. Establishes parameters for service circuits.	Compares actual load data with parameters set by network manager. Balances customer digit receiver (CDR) groups between dial pulse, TOUCH-TONE, and overflow. Administers tone and announcement circuits.	

TABLE B (Cont)

EQUIPMENT UTILIZATION

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE		
	Network Manager — Administration	Network Supervisor — Service	Network Supervisor — Assignment
Memory Administration	Reviews memory specifications in traffic orders. Establishes parameters for call store traffic registers. Recommends TAA/TRIMS/TRR run, when necessary, to district network manager. Coordinates TRIMS run with network design engineer.	Compares actual load data with parameters set by network manager. Monitors utilization of program store space. Establishes the need for TAA/TRIMS/TRR runs Establishes abbreviated line class codes. Monitors abbreviated line class code utilization. Establishes supplemental abbreviated line class codes.	

TABLE C

OFFICE STATUS EVALUATION

District: The district network manager and the district network manager-design are jointly responsible for establishing machine capacities and for insuring that adequate equipment is scheduled to maintain service criteria.

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE	
	Network Manager — Administration	Network Supervisor — Service
Capacity Setting	Reviews capacity studies.	Sets office capacity.
Load-Service Relations	Reviews load-service relations.	Develops load-service relations.
Capacity Management	Negotiates growth jobs with plant extension. Establishes plan for changing customer makeup of an office. "Freezes" growth when necessary.	Determines equipment shortages. Determines effect of commercial forecast on office capacity. Studies the effect of area transfers on capacity. Issues notice of potential service circuit or memory shortages.

TABLE D

SERVICE PROBLEM ANALYSIS AND CORRECTIVE ACTION

District: The district network manager is responsible for identifying and resolving all problems affecting service and for coordinating all actions necessary to protect service during abnormal traffic conditions.

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE		
	Network Manager — Administration	Network Supervisor — Service	Network Supervisor — Assignment
Service Indicators	Develops service parameters for use in a "quick-look" for service problems.	Reviews all TØC01 and TØC02 messages. Reviews data for service problems.	
Traffic Controls	Insures that traffic controls can be properly implemented.	Administers traffic controls.	
Abnormal Load Conditions	Coordinates service protection during abnormal conditions.	Monitors traffic data during abnormal conditions.	
System Initialization	Reports all phase actions.	Plans corrective action. Reports phases to network manager.	
Equipment Shortages	Develops relief plan.	Coordinates relief plan involving common equipment.	Coordinates relief plan involving line equipment.

TABLE E

TRANSITION MANAGEMENT

District: The district network manager is responsible for the protection of service during an office transition, for the efficient utilization of new equipment, and for insuring the accuracy of parameters and line and service circuit translations.

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE	
	Network Manager — Administration	Network Supervisor — Service
Method of Procedure (MOP)	Approves the MOP.	Participates in the preparation of the MOP.
Junctor Rearrangement	Advises network manager-design of need for intermediate junctor assignment program when necessary.	Reviews JAP.
Memory Rearrangement	Insures the accuracy of parameters.	Inspects parameter set card values. Insures that test translations are removed after cutover. Verifies service circuit translations.
Office Balance	Establishes plan for load balance.	Monitors load balance data.

TABLE F

LINE AND TRUNK ASSIGNMENT

District: The district network manager is responsible for the assignment of lines and directory numbers and for keeping records of assigned line equipment, directory numbers, and associated features.

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE	
	Network Manager — Administration	Network Supervisor — Assignment
Office Transition	Coordinates main station transfers. Coordinates business services customer additions.	Provides time translations for SLATTS. Provides translation growth process (TGP) translations for large area transfers. Oversees record keeping for area transfers. Provides final line translations for cutover. Provides input for TRUST.
Essential Service	Coordinates essential assignments with the commercial department.	Reviews essential assignments.
Special Assignments	Coordinates special service assignments with marketing and network maintenance.	Administers no-test lines. Administers dial tone delay alarm line. Administers MCC test lines. Administers service observing lines. Reviews hunting arrangements. Verifies intercept treatment.
Record-Keeping	Represents network administration in mechanized assignment operations. Establishes procedure for disposing of old records.	Keeps a record of customer directory numbers, equipment, and features.
Trunk Administration	Monitors trunk service.	Monitors trunk provisioning.

TABLE F (Cont)

LINE AND TRUNK ASSIGNMENT

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE	
	Network Manager — Administration	Network Supervisor — Assignment
Line Capacity	Reviews capacity statement for lines. Reviews reservation requests from commercial and marketing.	Establishes main station capacity based on lines. Coordinates with plant assignment supervisor to maintain party line fill. Coordinates assignment activity with plant assignment supervisor. Reviews records for overdue reservations.

TABLE G

PERSONNEL ADMINISTRATION

District: The district network manager is responsible for establishing job descriptions and responsibilities, evaluating job performance, and administering pay treatment of employees under his or her supervision. The scheduling of training necessary for the administration of an ESS office and the responsibility for handling grievances and maintaining good relations with the union are also functions of the district level of network management.

RESPONSIBILITY	LEVEL OF MANAGEMENT RESPONSIBLE	
	Network Manager — Administration	Network Supervisor — Service and Assignment
Job Performance Evaluation	Evaluates job performance of network supervisors.	Evaluates job performance of all reporting personnel.
Pay Treatment	Administers pay treatment for network supervisors.	Administers pay treatment for reporting personnel.
Training	Arranges necessary training for network supervisors.	Arranges necessary training for reporting personnel.
Grievances and Union Relations	Deals with grievances according to union contract and maintains good relations with union representatives.	Deals with grievances according to union contract and maintains good relations with union representatives.