

## NETWORK SUPERVISOR—4A TOLL

Personnel assigned as Network Supervisor—4A Toll will generally be responsible for optimum loading, balancing and equipment utilization of an installed 4A toll machine. This entails daily monitoring of service and load indicators and the identification, investigation and resolution of service problems. It also extends to protection of service levels during equipment additions, rearrangements and/or conversions.

This position supervises activities of reporting clerks related to the scheduling, collection, validation, and provision of network data. The 4A Network Supervisor uses this data to monitor the tandem switching performance and to evaluate present and future 4A machine capacities and switching configurations. When deficiencies and/or balance problems are discovered, the 4A Network Supervisor coordinates corrective action with counterparts in Long Lines and with operating telephone company personnel in the Network Operations, Network Engineering, Equipment Engineering and Trunk Administration Organizations. A significant portion of the responsibilities of this position involves the analysis of calling and routing patterns, determination of common equipment capacities, and other technical functions.

DUTIES AND RESPONSIBILITIES	PERCENT OF TOTAL TIME
A. Equipment Utilization	30
B. Office Status Evaluation/Capacity Determination	15
C. Service Problem Analysis	15
D. Data Administration	15
E. Transition Management	10
F. Trunk Network Adequacy	10
G. Miscellaneous	5

**Note:** Any reference to the Bell System product names may be substituted by outside vendor names, if applicable. All recommendations should apply with minimal modification when utilizing other vendor products.

### NOTICE

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**TITLE: NETWORK SUPERVISOR—4A TOLL**

**DEPARTMENT: NETWORK**

**SUPERVISOR: NETWORK MANAGER**

**JOB SUMMARY**

This position is responsible for the optimum loading, balancing, assignment and utilization of installed equipment; the daily analysis of toll switching network performance; the analysis of future 4A toll switching configurations and their capacities; and the identification, investigation, and resolution of all service problems. Additionally, this position is responsible for the protection of service during the installation of new equipment in the 4A machine.

The 4A machine may be either a 4A/4M card translator (CT) type or one equipped with an electronic translator (ETS) which may or may not include a peripheral bus computer (PBC) system.

Due to the size and complexity nature of the 4A machine, it is preferred that this job remain specialized. Should the 4A machine involved be small in size, it would be possible to assign additional responsibilities to this position, preferably those concerned with administration of related functions (e.g., crossbar tandem).

**DUTIES AND RESPONSIBILITIES**

**30% A. Analyzes trunk and common control equipment data to insure that installed toll equipment is being efficiently utilized.**

- (1) Sets threshold values for items in machine load service summaries and adjusts if required. These items include holding time and peg count ratios for incoming and outgoing link frames, markers, decoder channels, link controllers and various types of senders.
- (2) Analyzes data records to identify adverse trends of peg count, overflow, usage and/or holding time.
- (3) Reviews maintenance log to identify equipment out of service.
- (4) Analyzes data within and between groups of common control equipment. Compares to appropriate engineering criteria.
- (5) Combines analysis of above items (1 through 4) to identify adverse equipment operation and utilization situations.
- (6) Authorizes the distribution of network data trouble tickets to the Maintenance Supervisor for identified data troubles. Monitors to insure timely trouble correction and negotiates to remove obstacles.
- (7) Cooperates with the Maintenance Supervisor to investigate incidents where the data indicates that the equipment is operating incorrectly, or where an equipment imbalance or excessive maintenance outage situation is evident.
- (8) Recommends to the Network Manager the establishment of a load balance plan for trunk assigners to follow, based on weights and types of trunks and balance of loads between sender link frames, incoming and outgoing trunk link frames, trunk block connectors, foreign area translators and markers.

- (9) Monitors the ongoing assignment of trunks to insure an equalized traffic load between frames and switches and between intertoll and toll completing trunks. Requests trunk rearrangements and transfers be issued when these are required.
- (10) Reviews circuit requirements and forwards recommendations to Network Manager, who will approve recommendations; forward to Trunk Administration Organization for implementation.
- (11) Coordinates changes and additions of trunks with maintenance personnel to determine priorities of circuit completion and assures that due dates are met and roadblocks overcome.
- (12) (ETS-PBC) Supervises maintenance of form and routing change code records. Reviews and logs new form codes issued by trunk assignment and develops controls to insure changes are implemented by maintenance forces.
- (13) (Card Translator) Supervises maintenance of translator card records issued by the Trunk Department. Reviews all changes in the assignment of trunks, translator box numbers, trunk block connectors, and trunk class information for accuracy and balance.
- (14) Receives and analyzes network data, commercial forecasts, current plans, capacities and other load-related data. Maintains trends on key data items and refers problem areas involving engineering and trunk administration to the Network Manager.
- (15) Coordinates arrangements made for tone and recorded announcements with the Maintenance Supervisor.
- (16) Establishes records and summaries of toll network completion activities. Monitors call completion and trunk performance for problem areas involving automatic call distributor, Centrex CU and INWATS customers. After problem identification, refers to local Network Supervisor for resolution with the Marketing Department.

**15% B. Reviews and studies proposed equipment orders, analyzes data and calculates capacities to insure that adequate equipment is scheduled to be provided in the future.**

- (1) Studies proposed equipment arrangements and coordinates with Network Design Engineer and/or Equipment Engineer to effect changes of unacceptable equipment arrangements.
- (2) Reviews trunk group capacities and calculates capacities for common equipment elements (such as markers and decoders) and switching paths. Determines limiting item(s). Advises Network Manager concerning capacities and recommends courses of action. Negotiates with the Network Design Engineer to insure that adequate equipment is scheduled.
- (3) Calculates projected engineering characteristics and oversees development of expected load-service relationships. Analyzes results and advises Network Manager.
- (4) Calculates capacities to the exhaust of current office configuration. Analyzes results and recommends courses of action to the Network Manager. Negotiates with the Network Design Engineer regarding growth size and scheduling.
- (5) Analyzes current office data to detect changes in office and common equipment characteristics due to changes in traffic patterns and types of traffic. Maintains trend charts on such key items as marker, decoder and sender holding times. Identifies cases where these changes will affect 4A capacities and/or exhaust date. Advises Network Manager and negotiates with Network Design Engineer for relief.

**DIVISION A, SECTION 3**  
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(6) (ETS-PBC) Evaluates spare memory table capacity by reviewing the number of indices in use and preparing estimates of future requirements. Refers problem areas to Network Manager and Network Design Engineer.

(7) Calculates in-service requirements. Advises the Network Manager and coordinates with Maintenance Supervisor to insure that the requirements are met.

**15% C. Monitors and reviews all possible service indicators, investigates and studies data and other information to identify causes of service problems, and formulates corrective action to remove or rectify those problems.**

(1) Directs the monitoring of near real-time service results. Studies selected key service indicators including ineffective machine attempts (IMA), sender delay, overflows and incoming matching loss for possible problem indications.

(2) Studies network data contained in the machine load and service summary (MLSS), service observation failure summaries, and all other related data, and investigates to identify causes of service problems. Directs the implementation of supplementary analysis techniques when necessary.

(3) (Card Translator) Analyzes decoder usage and peg count for an increase in holding time. Directs investigation of the causes which could include an increase in 6-digit translation, an increase in principal city routing, marker congestion, changes in routing patterns or overloaded foreign area translators.

(4) Interprets trunk group exception reports including overflow percentages, attempts per circuit per hour (ACH), connections per circuit per hour (CCH), usage and percent occupancy. If necessary, requests demand reports for further investigation.

(5) Reviews assignment of first choice trunks to service observing equipment to assure an adequate sample size for incoming trunk service observing index. Coordinates required changes with service observing bureau, trunk assignment group and/or engineering.

(6) In a 4A machine linked with traffic service position systems (TSPS) office(s), reviews causes for a high rate of delay announcements, and cooperates with operator services, maintenance and design engineering to correct the situation.

(7) Originates corrective action plan for all service problems and reviews progress of the plan. Cooperates with and coordinates activities of other departmental groups to implement the plan and remove the problem cause.

(8) Investigates and studies all available data to identify future service problems. Advises Network Manager concerning these problems, develops interim relief plans, and coordinates the relief plans with other affected departmental groups.

(9) Participates in the development of a 4A network control plan to minimize the service impact caused by abnormal service conditions (holidays, disasters, telethons, elections, etc.)

(10) Analyzes office conditions to identify a service problem that requires Toll Network Management action. Cooperates with Toll Network Manager to determine the required action. Participates in control action as provided locally.

**15% D. Controls, plans and coordinates the activities of clerks concerning traffic measuring device administration, data scheduling and collection, and data validation and provision.**

(1) (Card Translator) Supervises the preparation and update of translator cards to gather network data.

- (2) (ETS-PBC) Supervises the preparation of teletypewriter input messages to schedule the following reports: machine engineering, trunk engineering, network management, traffic administration and traffic separation engineering.
- (3) Reviews the network design order for problems concerning data measuring devices or traffic registration equipment. Negotiates with Network Design Engineer to resolve problems.
- (4) Reviews assignments and input documents related to traffic measuring devices. Originates procedures to insure that devices are properly assigned initially and are updated as required.
- (5) Plans and controls busy hour study and selection of busy hours. Provides data collection schedule to Network Manager for approval.
- (6) Directs the overall data collection processes (including proper traffic measuring device operation). Cooperates interdepartmentally for the correction of data related problems.
- (7) Oversees the monitoring of daily service results and insures that data are collected for all potential high days. Establishes thresholds for exception reporting on trunk groups and components in the ineffective machine attempt report.
- (8) Analyzes data for components in the machine load and service summary and validates this by comparing actual holding times for individual and group components with engineered values. Informs other users of data problems, invalid data and unusual circumstances which affected the data. Directs reconstruction of missing or invalid data.
- (9) Directs compilation of summaries of network data required for network engineering. Distributes data to Network Design Engineer upon Network Manager's approval.
- (10) Reviews indications of data trouble (trouble tickets) identified by clerks. Distributes to Maintenance Supervisor for correction and monitors the prompt correction of data troubles.
- (11) Oversees and controls all activities and negotiates all obstacles related to data scheduling and collection and data validation and provision.

**10% E. Studies and investigates planned central office equipment additions, rearrangements and/or conversions. Supervises preparation of required cross-connections and translations. Plans for the efficient utilization of new equipment and the protection of service during the transition. Studies and interprets network data relating to the office before, during and after the equipment addition. Coordinates the toll administration activities required for preparation of the method of procedure (MOP).**

- (1) Studies documents and capacity data relating to proposed growth or replacement job. Evaluates impact such activity will have on service and inputs special items for consideration by the Network Design Engineer, Plant Extension Engineer, and Equipment Engineer in final network design order preparation and growth job scheduling.
- (2) Provides service protection input for derivation of detailed MOP based upon equipment requirements for peak traffic periods. Directs and oversees the preparation of documents involving sender load service curves, minimum common equipment requirements, and ineffective machine attempts (IMA) and incoming matching loss levels. Reviews these documents with Network Manager, who will approve them. Distributes documents and any other information required by the job contact committee.
- (3) Originates schedule for provision of cross-connections or translations, including traffic measurement devices. Oversees the preparation of these items. Reviews items with Network Manager and distributes actual cross-connections and/or translations to appropriate groups.

**DIVISION A, SECTION 3**

**Appendix 12**

- (4) Reviews transition management study data. Prepares and recommends a plan for making equipment and trunks that are involved in rearrangements or modifications available to the WECO. Informs Network Manager, who will approve plan.
- (5) Originates a plan for the efficient use of any new equipment. Coordinates efforts to relocate or rearrange equipment. Suggests job sequences which will allow maintenance forces sufficient time to receive cross-connections and trunk orders and to perform preliminary jumper work. Distributes and coordinates plans with the Maintenance Supervisor, the WECO supervisor, and other departmental groups involved.
- (6) Evaluates proposed MOP to insure that required equipment configuration is realized within allowable out-of-service guidelines, considering the time of day and season when installation and/or rearrangements are to be performed.
- (7) Develops follow-up procedure to monitor adherence to the MOP agreement during the transitional period. Schedules and analyzes MLSS reports to determine increases in ineffective machine attempts, sender attachment delay or incoming matching loss. Notes significant changes in holding times, excessive maintenance or installation outages and unequal distribution of traffic to various machine components. Initiates contingency plans for emergency restoral of equipment during heavy load conditions.
- (8) Monitors performance of load and service indicating devices during transitional period to insure data is available for all required periods. Issues job status/service reports during the transition.
- (9) Reviews and studies data gathered during period of transition. Determines whether there is a deterioration of service due to transitional activity and coordinates with all related departmental groups to effect a resolution to the problem. Maintains contacts with network management and the trunking engineer to avoid regenerated attempts caused by undertrunking or reduced call carrying capacity caused by addition of too many trunks in advance of the installation of necessary common control equipment.
- (10) Administers overall Toll Network Administration involvement on the job contact committee. Analyzes all requests made upon Toll Network Administration in relation to the addition and negotiates with Tandem Maintenance Supervisor, WECO supervisor, Equipment Engineer and Network Manager to insure that the network administration responsibilities related to the addition are met.
- (11) Coordinates the placement of new equipment into service with all departmental groups.
- (12) Coordinates conversion of machine to an electronic translator system. Supervises verification of office records and preparation of translations by Toll Network Organization. Coordinates with Trunk Engineer for the provision of additional route patterns and trunk groups in order to minimize plant recent change activity.
- (13) Coordinates conversion of ETS-PBC machine to common channel interoffice signaling (CCIS). Coordinates with Trunk Engineer and Equipment Engineer the selection of trunk equipment to be converted for CCIS use or installed as CCIS trunk equipment. Plans necessary rearrangements so CCIS trunk groups are on CCIS modified trunk link frames. Supervises verification of office records and preparation of translations by Toll Network Organization.

**10% F. Analyzes trunk group data, monitors toll trunk usage and activity and coordinates with trunk administrator and/or engineer to insure an adequate trunking network.**

- (1) Supervises the processing of trunk orders and maintenance of toll trunk records by clerks.

- (2) Reviews toll network configuration to insure that the inservice network is in agreement with the design trunk estimate and routing guides.
- (3) Analyzes trunk records to insure that trunks are in service prior to perceived need. Coordinates with trunk administrator and/or maintenance supervisor for order initiation, placement of trunks in service and to overcome any obstacles preventing the implementation of the required trunk network.
- (4) Analyzes trunking data to identify trunk groups that are beyond capacity or contribute to switch and frame imbalance. Coordinates with Trunk Administrator for additional trunks, routing changes and/or rearrangements.
- (5) Monitors and analyzes near real-time trunking data to identify suspected trunk group troubles and coordinates with Maintenance Supervisor for trouble identification and correction.
- (6) Determines if call volumes require mass calling arrangements and negotiates relief with Network Manager and Trunk Administrator. Supervises the monitoring of toll and special announcements.

**5% G. Miscellaneous**

- (2) Oversees preparation of and receives all reports related to toll administration activities. Reviews, endorses and distributes reports.
- (3) Administers personnel-related activities for clerical force (Company policy and objectives, subordinates' performance, evaluations, salary administration, training, safety, absences, etc).
- (4) Develops procedures to insure adequate work force, adequate training and organizational efficiency.
- (5) Maintains positive relations with the vocational representative groups.
- (6) Maintains positive interdepartmental working relationships.

**SCOPE AND NATURE OF SUPERVISION**

- (1) This position reports to a network manager along with three or four other network supervisors who may be dedicated to administration of other offices or may have responsibilities for the administration of local machines.
- (2) Immediate supervisor is involved in the setting of the overall goals and policies. However, due to the scope of the responsibilities of the manager, most of the activities of this position are not subject to supervisory review.
- (3) Guides for the job include the Network Management Handbook, DFMPs, TFPs, Company policy, job aids, union contracts, formal system training classes, and mutual agreements between the manager and the incumbent. Several of these procedures are detailed but there are many activities requiring decisions based upon judgment and experience.