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CONTROLLED MAINTENANCE PLAN DESCRIPTION

DISTRIBUTING FRAMES

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1. GENERAL

1.01 This practice describes the general plan for maintenance principles as applied to distributing frame operations either in a centralized frame environment or a local wire center. It applies to work performed on all types of frames (i.e., Main Distributing Frame [MDF], Intermediate Distributing Frame [IDF], Line Distributing Frame [LDF], Trunk Distributing Frame [TDF], etc.), and provides the general principles, definitions, descriptions, explanations, and examples of the controlled maintenance concept.

1.02 This practice is being reissued for the following reasons:

(a) Inclusion of changes to the Frameworker Performance Plan (FPP), BR 201-200-014

(b) Trouble ticket changes

(c) Frame Control Record changes

(d) Text changes to reflect the Computer System for Main Frame Operations (COSMOS) environments

(e) Changes to reflect the postdivestiture environment.

1.03 The title for each figure includes a number(s) in parentheses that identifies the paragraph(s) where the figure is referenced.

1.04 Suggestions for changes, additions, or deletions to this practice or to any of the controlled maintenance documents should be made as specified in AT&T Practice 000-010-015.

1.05 The information in this practice is intended for use by first and second level supervisors responsible for the frame operation. Within this practice, the first level supervisor shall be referred to as the supervisor and the second level supervisor shall be denoted by the term "manager".

1.06 This plan should be implemented on all frame operations having one or more equivalent frameworkers and can be used on smaller frames where evidence of problems exist. It is used to measure the quality performance of work, regardless of the type of office. It contains instructions and forms for evaluating and recording quality performance data of each individual frameworker. Supervisors and managers should be responsible for making the necessary work evaluations and recording the appropriate information. A thorough knowledge of this Frame Controlled Maintenance Plan (FMCP), the Frame Force Management Plan (FFMP) (BR 201-200-010), and the FFP (BR 201-200-014) is needed to ensure that work evaluations are complete, accurate and properly recorded, and therefore provide a fair and meaningful job performance evaluation.

1.07 Refer to the following practices for associated information:

- Network Maintenance Management Plan (NMAP)—AT&T Practice 780-125-500
- NMMP—Work Quality Inspection and Evaluation Program—AT&T Practice 780-125-502
- NMMP—Cost Control and Measurement—AT&T Practice 780-125-504.

2. CONTROLLED MAINTENANCE

2.01 Controlled Maintenance is the term applied to the general plan described in this practice for managing the quality of installation work and upkeep maintenance on all distributing frames. Controlled Maintenance is a series of actions or activities formulated to maintain service reliability using both preventive and corrective maintenance. The effective implementation and ongoing use of a Controlled Maintenance Plan are major contributing factors to providing excellent service and minimizing operating expenses.

2.02 In the administration of this Frame Controlled Maintenance Plan (FCMP) and the development of a fully trained frame force, there are two basic items that supervision should consider:

(1) The quality of the maintenance work being performed by frameworkers

(2) Determination of needs for craft personnel training, retraining, or guidance (if any).

2.03 The series of forms described in this practice have been designed for use in the distributing frame controlled maintenance effort. These forms should be used as the primary tools for documenting the maintenance activities and the quality performance level of the frame operation.

2.04 The use of these forms alone will not automatically ensure that an effective FCMP is being employed or that the frame performance index objectives are achieved. Primary emphasis is placed on the timely and satisfactory completion of all maintenance requirements. The completion of the necessary forms documenting these activities and their careful analysis should define what alterations to distributing frame operating procedures are needed in order to achieve the desired

performance level. The use of these forms is of particular importance to frame operations reporting performance levels in Bands L and U (refer to BR 201-200-015 for more detail on Frame Operational Review).

2.05 The word "maintenance," as used in this practice, refers to the quality of work performed on frames (placement and removal of jumpers) and the general frame "upkeep". There are two basic types of maintenance that can be applied to the frame operation—preventive and corrective.

2.06 Preventive Maintenance, when applied to distributing frames, is somewhat different from preventive maintenance described for switching systems. There are no periodic operational tests or relay adjustments to assure service reliability to customers. While there are some maintenance routines that should be scheduled (such as frame inspections, cleaning of blocks, maintenance of solder coppers, checking for missing heat coils and special service protection, etc.), the bulk of preventive maintenance is doing high quality work on the initial installation, rearrangement, or disconnection of service.

2.07 Service reliability is governed not only by the placement and removal of jumpers on the appropriate terminal, but also by the quality of the work that was performed on adjacent terminals (T-ZONE). Therefore, frameworkers are responsible for the "T-ZONE" surrounding the immediate working area (see paragraphs 3.12 and 3.13).

2.08 Corrective Maintenance consists of the activities of logging, locating, repairing and recording details of troubles reported by Central Office (CO) forces, other offices, testboards, and other sources.

2.09 A trouble occurs on the frame when customer service is not installed properly or existing service is interrupted due to poor quality of work. Unlike switching systems, trouble conditions on the frame are very seldom caused by the failure of frame components; however, troubles may be caused by broken blocks, internal crosses within a frame block, protector unit, or permanent frame wiring, etc. The existence of trouble is noted by observation or when trouble reports are received.

2.10 Accuracy and quality of work on distributing frames are important because the distributing frame presents the greatest exposure of customer service to the possibility of CO caused troubles. In most cases, troubles occurring on distributing frames are service affecting.

2.11 Troubles are generally categorized into the following two different types:

- **Solid Troubles:** Troubles that permanently affect the customer's line or circuit involved, causing a continuous failure. Examples of this type of trouble are broken jumpers, missing heat coils, wire clippings, solder splashes, etc.
- **Intermittent Troubles:** Those troubles that continue to appear and disappear until they are cleared. For example, wire clippings or solder splashes may cause intermittent failures and also may cause trouble indications to appear in different areas. Frameworker activity may cause vibrations that can disturb wire clippings or solder splashes, resulting in intermittent trouble conditions such as temporary crosses. These trouble conditions may be difficult to locate because they appear to move from one location to another.

2.12 The majority of frame troubles are the result of human error or mechanical failures caused by one or more of the following conditions. Responsible maintenance forces should be familiar with these causes.

- **Environment:** Environmental conditions in the form of wire clippings or solder splashes on blocks, and frame bags, ladder bags or scrap wire containers that have been

overfilled can cause frame troubles. Good housekeeping practices should eliminate nearly all improper environmental conditions.

- **Defects:** Failure of various frame components due to internal crosses and grounds in blocks, spring assemblies and protectors or open protection units are called defects.
- **Work Errors:** Frame troubles can be caused by human errors due to carelessness, faulty workmanship, poor quality, improper training, improper procedures on the part of the frame force and other forces working in the CO. Errors caused by the employees in other organizations should be investigated and controlled. Deviations from established documented maintenance methods also may result in work errors.

2.13 CO Frame Forces should become familiar with the CO (frame) maintenance practices that define procedures that can reduce the number of environmental problems and work errors. The consistent use of these practices can reduce the number of troubles caused as a result of wire clippings, solder splashes, improperly terminated jumpers, etc.

- **Typical Frame Procedure**— Frame force activity may cause troubles or billing errors when proper procedures are not followed in the operation of the frame. These procedures may involve such items as proper intercept methods, a go-ahead from the installer on change type orders requiring a field visit, use of proper methods when working transfer orders (so as not to interrupt customer service for an extended period), coordination with the Test Center or control the office before working on Special Circuits, etc.
- **Housekeeping**— Good housekeeping practices accomplish at least two important objectives in a frame operation: minimization of the dirt (solder splashes, wire clippings, etc.), safety hazards, and other potential problems associated with untidy areas; secondly, assistance in the establishment of an organized operating atmosphere, that is an important part of distributing frame maintenance. Material should not be stored haphazardly in the frame area. Tools, test equipment, drawings, and supplies should not be allowed to become dirt collectors; rather, they should be stored in an appropriate area and marked properly. All covers and protection on special circuits should be in place, except when work is in progress.
- **Other Forces**— Other forces (such as the Frame Control Center [FCC], Network Administration, Construction, etc.), have occasions to access frames. These forces might cause service-affecting problems. The frame supervisor should maintain coordination with the other forces in their procedures, records, and implementation of changes to ensure trouble-free customer service. In addition, when other forces work in the frame, the frame supervisor should be responsible for seeing that work is performed in a manner that does not jeopardize customer service.
- **Bell Operating Company (BOC) Practices Application**— BOC Practices are generated by the BOC,s and prescribe the proper procedures for placing, terminating, soldering, wrapping, and removing jumpers from service. Work performed in accordance with these instructions should result in an operation with high service reliability and low cost.

2.14 The control of distributing frame troubles is comprised of the following activities:

- **Handling Trouble Reports**— The proper handling of troubles calls for the completion of trouble reports and the coordination and follow-up of troubles referred to or referred from the frame force. This activity includes keeping current status logs for future analysis. Prompt response and fast restoral

of service through the use of trouble reports are key parts of the distributing frame function.

- **Arresting Trouble-Causing Factors**— Proper housekeeping methods, protection of service, prevention of work errors, and performing quality work on the initial installations are the essence of the frame maintenance job. Frameworkers should be thoroughly familiar with the entire frame job, the use of this maintenance program, the use of frame test equipment, and the significance of trouble reports.

3. PREVENTIVE MAINTENANCE

3.01 The bulk of preventive maintenance on distributing frames is the performance of high quality work on the initial installation, rearrangement or disconnection of service. As described in paragraph 2.06, preventive maintenance is also the term applied to the activities associated with locating, repairing and recording troubles that result from scheduled maintenance routines (i.e., frame inspections, cleaning of blocks, maintenance of solder coppers, checking for missing heat coils and special service protection, etc.).

A. Quality Control

3.02 The responsibility of the frame supervisor for obtaining high-quality work is directly related to the responsibility for service and cost. Work errors usually harm customer service. Investigations and corrections resulting from work errors increase costs. The order and nonorder activity on distributing frames presents many opportunities for work errors.

> **Note:** Order work pertains primarily to jumper wire activities. Nonorder work is defined as activities that support operations.

3.03 The activities of the supervisor and managers, that are directed at reducing work errors to a minimum and then holding them at a low level, should be coordinated into a quality control program. This program should provide an overall knowledge of distributing frame work quality and should identify the causes of work errors.

3.04 The supervisor should periodically check an adequate sample of each frameworker's work in order to determine the quality of the entire job. Furthermore, supervision should take the action required to correct work that is below standard. This implies that quality standards for the various kinds of work be known by the manager, supervisor and the frameworker. These standards are defined in Bell Operating Company (BOC) procedures as performance requirements or the proper method for performing assigned frame tasks. Therefore, the manager and supervisor should become familiar with these standards to evaluate work quality and take the necessary corrective action.

3.05 The existence of a quality control program can be effective because frameworkers know that quality is a requirement of the job. When they are aware that their work will be checked or observed, they tend to perform a higher quality work operation.

3.06 It is very important that all kinds of work performed by all frameworkers be checked for quality. The number of work items checked for each frameworker and for the total frame force may vary according to need. Mainly, the need is determined by the quality of the overall job being done as noted in past evaluations and the Frameworker Performance Plan (FPP).

3.07 Where practicable, supervisors should make quality inspections of work promptly after completion. The reason for this is that when an extended period of time has elapsed since the frameworker completed the job, someone else could have worked in the same area and caused deviations.

3.08 Results of work evaluations should be recorded on Form EO-6954, Frameworker

Work Evaluation Sheet. (Details for the completion of Form EO-6954 are included with each package of forms and are included in this plan as part of Fig. 1.)

3.09 An inspection item is a work activity that makes up part of the processing of a service order, trunk order, or other frame activity. It is **not** the number of orders evaluated. Example: A No. 5 crossbar (5XB) main station in service requires Main Distributing Frame (MDF), Number Group (NG), and Translator Frame (TRNSL) cross-connects. The work activity required on this order could provide an inspection item count of at least 14 as shown by the following example.

MDF Jumper Placement	- 1 Item
MDF Jumper Termination	- 2 Items
T-Zone Inspection	- 3 Items (1 item per frame
NG-Cross Connects	- 3 Items
Translator-Cross Connect	- 1 Item per translator
Tests	- 1 Item
Coils	- 1 Item
Records	- 1 Item per line
Filing	- 1 Item
Total	14 Items

3.10 The number of inspection items and the number of items found satisfactory should be recorded on Form EO-6954. (Refer to Fig. 1 for an example of Form EO-6954 and the definition of terms for the Frameworker Evaluation Sheet.) The results of the individual Forms EO-6954 are summarized on Form EO-6955-B, Frameworker Performance Plan-Quality. (See Fig. 2.)

3.11 All training required as a result of unsatisfactory inspection items should be noted on Form EO-6954. After the required training is completed, details should be entered on the training record of the appropriate frameworker. The supervisor should discuss results of evaluations only with those directly concerned, i.e., the frameworker or immediate supervisors.

T-ZONE Inspection

3.12 Frameworkers should be responsible for a **maximum** T-ZONE area that should be composed of three zones on the Horizontal MDF (HMDF) as follows: (1) 20 rows of lugs to the left of the work location, (2) 20 rows of lugs to the right of the work location, (3) 20 rows of lugs immediately below the work location. On the vertical side of conventional frames (VMDF), the **maximum** T-ZONE area should be composed of two zones as follows: (1) 20 rows of lugs immediately above the work location, (2) 20 rows of lugs immediately below the work location. The T-ZONE area should be determined locally for each frame location, taking into consideration the general condition of the frame and the amount of time needed to clear all defects within the specified T-ZONE.

3.13 It is suggested that the frameworker clear defects within the T-ZONE while working in the area. Defects that require extensive repair should not be cleared at this time. Instead, they should be logged or ticketed by the frameworker. When scheduled work is assigned, corrective action for these defects may be included.

Frameworker Work Evaluations

3.14 The two main purposes for the evaluation of work are to develop a fully trained force and to ensure the overall quality of the distributing frame operation. All employees need training to develop fully their capabilities and enhance their opportunities. The work of employees who are trained fully on their present assignment should be evaluated for evidence that they continue to meet high standards. The evaluation also serves as an input to the employee performance record.

3.15 Improved performance usually is recognized by higher quality, increased efficiency, greater job knowledge, use of proper methods and safety. In many cases of substandard performance, the need for training becomes evident. Additional training may be needed as a result of poor work habits, absence of technical knowledge, or a lack of knowledge of the supervisor's objectives. Supervisors should not assume that all frameworkers know how to do all work operations correctly or that they know exactly what is expected of them. Work evaluations are a means where supervisors may determine training needs.

3.16 The supervisor should schedule work evaluations so they become a part of the work day along with the other duties. This schedule should reflect a sample of work in progress and work recently completed.

3.17 In addition to the scheduled work evaluations, the supervisor should be aware of situations indicating an immediate investigation. When a frameworker's error interrupts service, there is an immediate need for an investigation to determine the reason for the error. Corrective action should be taken to prevent recurrence.

Work Evaluation Process

3.18 The work evaluation process consists of scheduling work evaluations, making each evaluation, taking appropriate action, recording results on Form EO-6954, and following-up. There are two means of work evaluations: **work inspections** and **work observations**. Each has its own particular application. The supervisor should be careful to select the best way for accomplishing the intended results, and should avoid reliance on one type because of habit.

3.19 Work Inspections are used for evaluating a finished job. Jobs such as cross-connections run and terminated, record entries, and service ordering filing are examples of work that can be evaluated accurately when the job is completed. However, the examination of completed cross-connection work that is found faultless does not indicate whether the frameworker worked efficiently and safely, used proper tools or followed proper service protection procedures.

3.20 In evaluating completed work, it is important that the supervisor be totally familiar with BOC procedures and local requirements that the frameworker is to apply. Unless the required standards are applied, the supervisor will not know if jobs are done correctly and completely. Quick and partial checks should not be considered satisfactory.

3.21 Work Observations are used to determine if correct procedures, proper tools, and prescribed methods are being used by the frameworker. In addition, particulars, such as compliance with the Accident Prevention Plan (APP), service protection procedures, and job knowledge also can be reviewed while the work is being observed.

3.22 In performing work evaluations, the frame supervisor should evaluate the following:

- Wire placement
- Wire removal
- Terminations (soldering, wire trap, etc.)
- Protection (coils, special protection, etc.)
- Testing
- Order completion
- T-ZONE
- Intercept on disconnect activity
- Use of proper methods
- Use of proper tools
- Completion of logs and records
- Filing
- Safety
- Housekeeping

Attitudes and Objectives

3.23 The supervisor and reporting employees should have a "quality attitude" to achieve the desired results of quality control. Development of these attitudes initially may place great demands on supervisory time. However, it will be worth all the effort expended to establish this type of office environment.

3.24 The supervisor's objective in making quality inspections should be to correct areas where work is deficient and to give credit for quality work. When an employee's work does not meet the quality requirements, the supervisor should work with that employee in whatever way is necessary to overcome the problem. Almost without exception, if employees know that high quality performance is expected and will be recognized, they will work to meet these standards.

3.25 The need for doing work evaluations changes. Generally, it is not practical to specify quotas that would apply to each employee. However, to provide a reasonable basis for evaluation, a minimum number of 100 items should be inspected each month for each frameworker. (See paragraph 3.09 for definition of an inspection item.) The maximum number of items for each frameworker should be the agreement between first and second level supervision.

3.26 As evaluations disclose improvements resulting from corrective action, the number of items inspected may be reduced, providing the minimum number of evaluations are inspected for each frameworker each month. In all cases, the first and second level supervisors should agree on quantities of work evaluations.

B. Scheduled Routine Work (ETLs)

3.27 The following paragraphs describe maintenance routines that should be performed on distributing frames. The basis for this type of preventive maintenance activity is the Equipment Test List (ETL). (See Fig. 3 for the ETL format.) The ETL indicates test requirements and intervals. These tests are scheduled on distributing frames to prevent trouble conditions. (Figure 4 illustrates the preventive maintenance process as used in this Frame Controlled Maintenance Plan [FCMP].)

> **Note:** Where operation support systems provide mechanized schedules and maintenance records of preventive maintenance activity, the equivalent forms and records are acceptable in lieu of the forms suggested by this document.

3.28 The first step in establishing this part of the frame preventive maintenance program is the identification and scheduling of all required routines. ETLs are available to assist in the identification of these routines. The ETLs, that are companions to the test and inspection practices, are standards for the application of maintenance instructions contained in BOC Practices. (ETLs are numbered in the same series as the tests they cover. Distributing frame ETLs generally are found in AT&T Practices 201-001-011 and 069-001-011.)

3.29 Each ETL lists all tests, inspections, and other instructions for the frame covered by the ETL. An action classification is assigned to each instruction indicating the manner where the instruction should be applied. For some action classifications, the ETL assigns suggested minimum frequencies of application. For the most part, the distributing frame tests will have an asterisk (*) indicated as the frequency. This indicates that the frequency for these tests should be assigned locally as required.

3.30 The test intervals, when specified, should meet the needs of most frame operations and should be consistent with reasonable costs. The tests should be performed at the interval listed in the ETL or as assigned locally, but not less frequently than assigned in the ETL. Frame conditions may dictate that tests be performed at shorter intervals than listed in the

ETL. The purpose of performing recurring work is to prevent service interruptions.

Classification of Routines

3.31 All tests, inspections or other requirements in the ETLs for distributing frames are given three classifications. The use of these classifications is described below. The word **test** in the following descriptions is used to mean a test, inspection, or other work requirement.

3.32 Mandatory Work (MW): MW tests are used to detect actual or potential trouble conditions that could result in a severe service penalty. Indications of these troubles are sometimes obscure.

- MW tests should be performed at a frequency equal to or more frequently than specified in the ETL.
- Some frame components, such as special service devices, are shown as MW because of the critical nature of this service.

3.33 Mandatory Review (MR): MR tests are used to detect actual or potential trouble conditions that do not result in a severe service penalty. Indications of these troubles are sometimes obscure.

- The test frequency assigned to MR routines indicates that a review should be made to determine if there is a need to perform the test.
- At a time of review, if the test has been performed on all units since the time of the previous review, no work is indicated unless a check of corrective maintenance data shows otherwise. If the test has not been performed since the previous review, it should be performed on all units. If a decision is made to pass an MR routine, a notation should be recorded on the Test and Inspection Summaries, Forms EO-5453 and EO-5454.

3.34 Trouble Test (TT): TTs are not performed at a specified frequency, but should be used (as needed) to verify and isolate troubles revealed by other indicators or analysis.

3.35 Figure 3 is the format used in documenting routine test information. The test information is arranged in the following order from left to right: practice number, issue/addendum, test letter or paragraph number, test title, test class, frequency, and the last space is for a locally assigned job number. (For a list of Distributing Frame and applicable ETLs, refer to Division 201 in the numerical index.)

3.36 In order to provide a complete record of all tests and inspections found in the BOC Practices, the ETLs contain tests which may not apply to all frame operations; therefore, the pages that do not apply should be retained for later use. Parts of other pages which do not apply are indicated by writing NA (Not Applicable) in the assigned job number column on the ETL or Form EO-5450.

3.37 Other tests, which are not included in the standard frame ETLs but apply on a local basis, should be entered on a blank EO-5450 form (Fig. 5). Examples are security in the frame area, safety items, and requirements to other frame equipment which do not have an associated ETL. (Refer to AT&T Practices 010-300-011 for an explanation of ETL formats in detail.)

Scheduling of Routines (Form EO-5451)

3.38 After all required routines have been identified, the supervisor should create a schedule for completing the routines consistent with the needs of the frame operation and the available work force. To assist in this operation, Form EO-5451 (Fig. 6) is provided.

3.39 Form EO-5451 provides columns for reading most of the information contained on the ETL, if desired. (For detailed instructions in preparing this form, see Fig. 6.)

Test and Inspection Work Order and Record (Form EO-5452)

3.40 Form EO-5452 or an equivalent form (Fig. 7) is used as a preventive maintenance work order and a record of the work performed. As routines become due, the supervisor should prepare Form EO-5452 and assign the routines to the frame force. As the tests are completed, the results are recorded in the appropriate spaces on the form. Details of test failures and troubles found are entered in the space provided. Complete or partial details of a job are entered in the progress report portion of the form. All portions of the form should be completed accurately. (For detailed instructions in preparing this form, see Fig. 7.)

3.41 Some tests and inspections ordinarily do not result in many found troubles and do not need numerous separate work operations. In these cases, it is not necessary to use Form EO-5452. Test or inspection results may be recorded directly on Form EO-5453 or EO-5454.

Test and Inspection Summary (Form EO-5453, EO-5454 or EO-5455)

3.42 Form EO-5453 (Fig. 8), Form EO-5454 (Fig. 9), and Form EO-5455 (Fig. 10) are prepared from the applicable ETL or Form EO-5450. These forms provide a summary of the results of previous testing for comparison to the current test results and the analysis of corrective maintenance records. They also provide a record of when the tests were performed and the amount of time required.

3.43 Forms EO-5453, EO-5454, and/or Form EO-5455 are the source of information for preparing Form EO-5452, Test and Inspection Work Order and Record.

3.44 Form EO-5453 (Fig. 8) provides spaces on the front of the form for recording assignment data, practice number, equipment work description, number of equipment units involved, estimate of work time, and the results of the work done. The back of the form provides additional space for results.

3.45 Form EO-5454 (Fig. 9) is a smaller, card version of Form EO-5453. Form EO-5454 is more suitable when a card file arrangement is desired for test and inspection routines.

3.46 Generally, it is suggested that ETL job assignments be made so that the work may be completed within one work tour. In large operations, certain jobs may have to be portioned into smaller assignments, because the total amount of work is too great to be completed during one work tour. Form EO-5455 (Fig. 10), which may be used for large operations, provides spaces for summarizing multiple assignment work details.

3.47 Where multiple job assignments are required, individual work orders (Form EO-5452) should be prepared as each assignment is due. When the assignment is completed, details should be posted in the appropriate spaces on Form EO-5455. If desired, progress on extended routines can be noted by using a light colored pencil to color the WORK COMPL spaces as the completion dates are entered.

3.48 Forms EO-5453, EO-5454 or EO-5455 should be prepared for each MW or MR test specified by the ETL. The proper use of FCMP calls for all information to be entered on these forms.

3.49 Distributing frame operations using a mechanized form of ETL scheduling should refer to AT&T Practice 201-020-510, Part 4 for a detailed description of an automated ETL administration.

4. CORRECTIVE MAINTENANCE

4.01 In the Frame Controlled Maintenance Plan (FMCP), corrective maintenance procedures are used for handling trouble reports from all sources other than preventive maintenance routines. These procedures are aimed at:

- Providing an effective means for control and prompt handling of trouble reports
- Dispatching reports for trouble location and repair
- Providing for orderly and simplified record-keeping.

4.02 The corrective maintenance process (see Fig. 11) is initiated by trouble reports and is completed by restoring service and closing out trouble tickets. Trouble tickets should be analyzed periodically to determine if modifications to the preventive maintenance program is needed.

A. Monitoring and Evaluating Frame Performance

4.03 The primary means of determining frame performance is through the interpretation of service and administration measurements.

4.04 These measurements should be compared to an established set of objectives. Undesirable deviations in service directly relate to a degradation in customer service and are a stimulus for a detailed analysis of trouble reports.

Setting Objectives

4.05 The establishment of objectives for a frame operation should be based on the attainment of high levels of service performance. In the event that performance is far below the objective level, it may be helpful to set interim objectives that can be met in a short period of time with a reasonable amount of effort. Unattainable or unreasonable objectives tend to have a detrimental effect on attempts to improve performance.

Frame Control Record (Form EO-5497)

4.06 The Frame Control Record, Form EO-5497 (Fig. 12), is used to summarize the causes of Central Office (CO) frame troubles. It provides a current picture of the frame 5 codes on a daily basis that can be compared to other days and the established frame objective.

4.07 The report period covered by a control record should be the 23rd of one month to the 22nd of the following month. This report period coincides with TREAT (Trouble Report Evaluation and Analysis Tool), used by the Automated Repair Service Bureau and the appropriate Network Switching Performance Measurement Plan. (Figure 12 provides a detailed description on the use of this control record.)

B. Correcting Troubles

4.08 The primary sources of trouble reports are the Repair Service Bureau (RSB), other offices, and CO forces. A well-controlled FCMP should provide for the proper administration of all trouble reports.

4.09 When a trouble report is received at the Frame Control Center (FCC) or frame location, a Trouble Ticket (Form EO-10260) may be prepared where warranted and/or the report logged on Form EO-5457 (Central Office Log). Once the trouble is cleared, the results should be forwarded to the responsible organization (i.e., RSB, FCC, SCC, etc.). If frame locations are administered from a centralized location (FCC, SCC), a Central Office Log should be maintained in the center for trouble reports received.

Trouble Ticket (Form EO-10260)

4.10 Trouble tickets are corrective maintenance work orders and records for maintenance personnel. They also serve as the source document for details of trouble reports and the resulting found or not-found troubles. It should be the responsibility of the supervisor to instruct all craft or clerical personnel in the proper preparation of trouble tickets. (Detailed instructions for the preparation of Form EO-10260 are found in Fig. 13.)

4.11 Trouble tickets are classified as T (Trouble) or M (Memo) according to the following:

- T-type tickets are issued for reports from the RSB (customer reports), other offices, other departments, and CO forces which need corrective action.
- M-type tickets are issued to cover pending work operations as a result of closed-out T-tickets where repairs are to be made later. Examples of this type of trouble ticket are a defective frame component, subscriber service moved to new equipment, or repairs to a defective component to be made later. The use of "M" tickets will have limited application in most frame operations; however, when these type trouble tickets are written, they should be administered in accordance with this practice.

4.12 A trouble reporting source is assigned an alphabetical designation for identification on the trouble ticket (see Table A). Class A reports also are given a disposition code to identify where the trouble was reported (CO, Outside Plant, etc.), and if the trouble was found or not found. If the trouble was referred to the distributing frame, it is coded in accordance with the Customer Trouble Analysis Plan (CTRAP), AT&T Practice 660-100-013 or TREAT, AT&T Practice 660-169-013.

4.13 When "T" Tickets are closed out, details of found or not-found troubles should be recorded for future analysis. A portion of the ticket is arranged for coding trouble data. Table B identifies the situations for coding the FRAME block and scoring the items on the right side of the ticket. Table C provides a list of major distributing frame designations and the appropriate abbreviation. (Figures 14 through 17 illustrate completed "T" tickets and should be used as a guide in the preparation of frame trouble tickets.)

4.14 Each "T" ticket should have an entry in the "Frame" space. Enter the frame component and number (i.e., Vertical Side of Main Distributing Frame [VMDF] 201/902, No Trouble Found [NTF] or Referred Out [REF OUT]). All troubles found in the wiring of a particular frame component should be coded to that component. Troubles that "came clear while testing" and were isolated to a particular frame should be coded also to that frame component.

4.15 As previously discussed, "M" tickets may be issued to cover pending work operations as a result of closed-out "T" tickets. When the report is closed out and the service is restored by removing the defective component from service, the associated "T" ticket is kept in a special file for pending work. Later, when a craft person has been assigned to repair the defective item, an "M" ticket is issued for the work operation. When the component is restored to service, the "T" and "M" tickets are completed and filed. "M" tickets may be issued also to clear defects found as a result of T-ZONE inspections.

4.16 Trouble tickets are serially numbered for identification and for relating them to reports or troubles. (Ticket serial numbers are entered on the Central Office Log described in paragraph 4.18.) It is suggested that the tickets be numbered serially beginning at the first of each year. If the frame operation is experiencing a large volume of trouble reports (10 or more per month), then the tickets should be numbered serially beginning at the first of each month (i.e., April's tickets would begin with 4-1). The supervisor should determine the ticket numbering scheme that best fits the individual frame operation. In some of the smaller operations, it may be desirable to serialize and record both CO and frame trouble tickets on the same Central Office Log. Here again, this is at the discretion of the individual supervisor.

4.17 Trouble tickets should not be issued for recording troubles disclosed by preventive maintenance activities.

Central Office Log (Form EO-5457)

4.18 The Central Office Log, Form EO-5457 (Fig. 18) is used for recording frame trouble reports and other distributing frame activity

that could result in trouble reports. The log is a convenient display of pertinent information associated with trouble reports when the log is used in lieu of frame tickets. Detailed information is entered on the log.

4.19 This log may be used also for noting other distributing frame activity, i.e., contractor activity, outside plant forces performing work on distributing frames, etc. These entries are useful for investigating trouble reports that may be associated with that type of activity.

4.20 The Central Office Log may be closed out monthly or periodically, depending on the volume of trouble reports and other entries. In small offices, it may be convenient to use the same Central Office Log for recording both switching system and frame trouble reports and other office activity. In either case, any trouble reports which are not closed out on a log should be carried over to the log for the next period with explanatory notes.

C. Analysis of Trouble Records

4.21 One important activity that is a part of corrective maintenance is the periodic analysis of completed trouble records. In addition to the trouble tickets, results of preventive maintenance routines should be analyzed, also. The purpose of this analysis is to categorize all troubles in terms of frame components, causes of trouble and to initiate positive action to reduce the possibility of future troubles.

4.22 The analysis of trouble reports may result in any number of actions. Some examples of these actions are:

- Increase or suggest a decrease in the frequency of a particular preventive maintenance routine
- Initiate on-the-job training to reduce work errors
- Change housekeeping and cleaning routines to reduce wire clippings, solder slashes, etc., on the distributing frame.

Ticket File

4.23 One of the first steps in the analysis of trouble reports should be the creation of a ticket file which provides for the systematic storage of trouble tickets. The trouble tickets are filed in accordance with the equipment code on the trouble ticket. All NTF tickets, which should not be associated with a particular frame component, should be filed in a bin designated as NTF. Separate bins should be designated for filing MEMO, HOLD FOR REPAIR, and PENDING trouble tickets issued during the current month. The file should be located in the administration center for that particular frame location.

4.24 The ticket file bins should be arranged according to the major distributing frame components as listed in Table C. As experience is gained with a frame operation, the supervisor may change the layout of the ticket file to meet the needs of a particular distributing frame. (Figure 19 illustrates a suggested ticket filing arrangement.) If practical, the distributing frame filing system may be an addition to the one presently set up for the associated switching system.

4.25 Trouble tickets should be retained in a 3-month moving file. At the end of each report period, tickets for the oldest month should be removed. (Figure 19 illustrates two suggested methods of retaining trouble tickets in a 3-month file.)

5. QUALITY ASSURANCE (SECOND LEVEL RESPONSIBILITY)

5.01 The procedures in this part describe the manager's role in the administration of an effective distributing frame quality control program.

5.02 An effective quality control program will come about only as a result of an attempt by management to reduce and hold errors to a minimum. As quality improves, so does the service to customers and the cost to the company.

However, an effective quality control program cannot be accomplished without the close supervision of both the manager and the supervisor.

5.03 It is important that the manager and each of the subordinate supervisors agree upon service and cost objectives (e.g., frame code 5s, percent efficiency, percent nonorder time, etc.). In addition, there should be an agreement for the number of items inspected if the indicated need is more than the minimum (as suggested in paragraph 3.25). To avoid misunderstanding, such objectives should be in writing, with copies in the files of both the manager and the supervisor.

5.04 In order to ensure quality workmanship on the frame, performance of work evaluations according to inspection standards, an effective corrective action program, and compliance with all distributing frame administrative programs, the manager should be responsible for the following areas.

A. Technical

5.05 Work Evaluations— The manager should perform work inspections and observations of craft work as follows:

(a) Work Evaluations (Independent of those made by the supervisor)

(b) Work Evaluations (Accompanying the supervisor).

5.06 The manager should perform a minimum of 25 work inspection items per frame per quarter for frames with one or more full-time frame attendants. The time interval is every six months for frames with less than one full-time frame attendant. These work evaluations should be a random number of inspections independent of those performed by the supervisor (including some inspection items previously evaluated by the supervisor). If the work evaluations performed by the manager and those performed by the supervisor do not agree on the quality of workmanship, then the manager should accompany the supervisor during work inspections and work observations. This should provide the manager with information regarding the supervisor's technical competence and ability to perform work evaluations according to inspection standards.

5.07 Results of work evaluations performed by the manager are recorded on Form EO-6954 (Frameworker Work Evaluation Sheet) and summarized on Form EO-6955-B (Frameworker Performance Plan-Quality). (Refer to Part 3 of this practice for detailed information concerning the performance of work evaluations. Further information on frameworker evaluations is located in BR 201-200-014, Frameworker Performance Plan [FPP].)

5.08 Data reviewed and pertinent remarks concerning work evaluations which were performed by the supervisor and reviewed by the manager should be entered on Form EO-6954. (Appropriate spaces have been provided on Form EO-6954 for this purpose.)

5.09 Distributing Frame Congestion— At least once every six months, the manager should perform checks to determine horizontal shelf and express trough pileup on all distributing frames. The checks should be made on the various types of distributing frames as follows:

(a) **Conventional Frame**

(1) The jumper pileup should not block access to the distributing rings at the rear of the horizontal shelf.

(2) The jumper pileup should not block access to the fanning holes in the base of the horizontal terminal strips.

(3) There should be a minimum of 3-1/2 inches between the top of the jumper pile and the next higher shelf for the frameworker easily to reach the distributing rings at the rear of the shelf.

These requirements limit the maximum jumper pileup to 3-1/2 inches on the conventional Main Distributing Frame (MDF) with 8-inch shelf spacing and 1-inch support arms, and to 5-1/2 inches on the conventional MDF with 10-inch shelf spacing. (Figure 20 illustrates a maximum jumper pileup that satisfies the three preceding physical conditions.) Frames having either moderate (one to two shelves with congestion) or excessive (three or more shelves with congestion) should be analyzed fully to determine the cause and to establish an effective corrective action program.

(b) **ESS™ Modular Frame**

(1) On an Electronic Switching System (ESS) Modular Frame, the test for congestion is applied to both the upper and lower jumper troughs at the same point in the frame lineup. Select by inspection the four locations in the frame lineup where the jumper pileup in both the upper and lower troughs appears to be greatest. Compress the jumpers in each trough to the top of the pileup. Add the two measures together. The frame is not considered to be congested if the combined measure is less than 5 inches at any one of the four locations. If the combined measure is 5 inches or greater at any one of the four locations, the frame is congested and should be analyzed fully to determine the cause and to establish an effective corrective action program. In some later versions of the ESS Modular Frame, the upper trough was subdivided into two troughs. In these cases, the combined compressed pileup in both upper troughs and the lower trough should not exceed 5 inches.

(c) **COSMIC™ Frames Without COSMOS**

(1) On Common System Main Interconnection Frame System (COSMIC) frames that do not have Computer System for Main Frame operations (COSMOS), the test for congestion is applied to both the upper and lower jumper troughs at the same point in the frame lineup. Select by inspection the four locations in the frame lineup where the jumper pileup in both the upper and lower troughs appears to be greatest. Compress the jumpers in each trough and measure the compressed jumper pileup from the bottom of the trough to the top of the pileup. Locate the point on the graph in Fig. 21 that corresponds to the measured height of the compressed pileup in the upper and lower trough. If the point falls below the line for all four locations, there is not congestion. If the point is on or above the line at any one of the four locations, the frame is considered to be congested. Frames (ESS-MODULAR or COSMIC) having congestion should be analyzed to determine the cause and to establish an effective corrective action program. (The manager should be a member of the Congestion and Control Review Committee [or its equivalent] as suggested in BSPs 680-535-009 and 680-830-012.)

B. COSMOS Data Base Accuracy

5.10 The purpose of maintaining the integrity of the COSMOS data base is to assure its trouble-free use. To maintain the integrity of

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trouble-free use. To maintain the integrity of the data base with respect to facility associations and individual facility status, periodic sampling of the telephone number (TN), office equipment (OE), and cable pair (CP) files are made to test statistically the agreement of the data base with actual wiring in the Central Office (CO).

5.11 The random data base sample should be obtained with transaction Verification (VER) of the data base run by the data base manager. A complete frame check of the circuits listed by VER should lead to an estimate of data base accuracy. Data base accuracy estimates are important because they assist in determining trouble conditions in the data base and their potential causes. They assist in determining whether accuracy levels are changing and provide a quantitative value for the changes occurring. They can be used to determine whether wholesale data base purification is needed and, if so, in which areas.

5.12 Observation of operating COSMOS applications indicates that 95 percent VER level of data base accuracy should provide a smooth running operation. It is important to estimate the data base accuracy level before going from a manual operation to COSMOS operations. If a 95 percent or higher accuracy level is not obtained, then the start of operations should be deferred. After going operational, if the level drops below 95 percent, the corrective actions indicated in Table D should be reviewed with responsible interface groups and a corrective program established.

5.13 Transaction VER provides all related circuit information for 150 randomly selected TN and CP (50 of each). Optionally, 50 more random circuits are selected if the tie pair option is used. Transaction VER also lists the circuits in the CP MDF location order to facilitate the frame verification. In addition, for each circuit, a comment field and verification summary field are provided for convenience in recording the results of the frame verification. (See Fig. 22 for a sample VER work sheet and Fig. 23 for an example of verification results.)

5.14 Samples are provided in multiples of 150 facilities (200 if tie pair circuits selected). For example, if 300 facilities (100 CP, 100 OE, 100 TN) are desired, VER should be run twice. It is possible that multiple runs of VER will list the same facility more than once; however, the probability of this occurring is remote. It should be noted that in any given run of VER, more than 50 CP, for example, will be listed. This is because most of the 50 randomly selected OE will have associated CP and, similarly, associated CP will be listed for the 50 randomly selected TN. Hence, a given run of VER will provide 150 "circuits," where a "circuit" can consist of a spare facility. Generally, more than 100 different CP, OE and TN will be associated with these circuits.

5.15 Since the data base is dynamic, care should be taken to limit the VER runs and subsequent frame verification effort to the amount which can be accomplished during one day. In other words, only execute as many VER runs as can be checked physically by the frame in one day. This will keep the VER output as current as possible and avoid "old" data.

5.16 Statistical sampling of data base accuracy is meaningful only if the sampling is done **regularly** and **consistently**. A schedule should be established for executing VER runs and the results should be recorded over extended periods of time.

5.17 The suggested frequencies for sampling data base accuracy are shown in Table E. When circuit accuracy decreases, the number of VER runs should be increased to monitor the results of a corrective program.

5.18 If more information is required on the VER transaction, refer to Sample Selection and Central Office-Frame Review in BR 190-520-005.

C. Administrative

5.19 Corrective Action Program— Each supervisor should have an established corrective action program for correcting deficiencies found through the use of Frame Force Management Plan (FFMP), Frame Controlled Maintenance Plan (FCMP), and FPP. This program should include the required training or retraining as a result of unsatisfactory work items or a low percentage of efficiency on individual frameworkers or the overall frame force. The manager should ensure also that necessary follow-up and documentation of this training is being made. Other areas of corrective action could include frame rehabilitation, investigation and control of discrepancies, roadblocks, service affecting troubles, etc.

5.20 FCMP— Each frame operation with one or more full time frameworker should use FCMP. It should be the responsibility of the manager to see that FCMP is being used properly, and that all the associated forms and control records are filled out correctly.

5.21 FFMP— Each frame operation with one or more full time frameworkers should use FFMP, BR 201-200-010. Initially, the manager should determine that the time study was performed properly, that it was recorded properly, and that realistic objectives have been set. At regular intervals, the manager should check also the other frame force management control forms for completeness, accuracy, and utilization. These include:

- Daily Forecast (EO-6619 or EO-6619-1)
- Loading Sheet (EO-6620)
- Load and Work Time Record (EO-6843)
- Daily Central Office Frame Activity Log (EO-6622)
- Other Work Log (EO-6623)
- Central Office Monthly Control Log (EO-6624)
- Speaker Activity Log (EO-6625)
- Frame Control Record (EO-5497)
- Work Assignment List (EO-5848).

5.22 FFP— The manager should be assured that the information used by FPP, BR 201-200-015, for the appraisal of each craft person is accurate and reliable data. Forms EO-6620 (Loading Sheet), EO-6843 (Load and Work Time Record), and EO-6954 (Frameworker Work Evaluation Sheet) for each individual frameworker should be checked periodically for accuracy. The appropriate information should be summarized on Form EO-6955-A (Frameworker Performance Plan-Productivity) and Form EO-6955-B (Frameworker Performance Plan-Quality.) A check should be made also to verify that the supervisor is exercising job rotation among the frame force. If job rotation is not feasible, justification for lack of rotation should be documented and considered carefully for its effect upon the employee.

> **Note:** An audit trail of the activities is an excellent indicator as to whether or not the plans are being used to improve the quality of workmanship, the technical competence of individual frameworkers, and to increase overall frame efficiency.

5.23 The manager should schedule office visits periodically to perform the necessary work evaluations and review the administrative procedures (as explained in paragraphs 5.19 through 5.22). These results should be critiqued with the supervisor, documented, and, when indicated, the necessary follow-up action taken.

5.24 During these office visits, all other areas of the frame operation should be reviewed and critiqued (such as the Accident Prevention Plan [APP], Cable Transfer Administration [AT&T Practice 620-050-020], etc.).

5.25 Having performed the functions explained in paragraphs 5.23 and 5.24 should enable

the manager to make judgment as to the effectiveness of the frame supervisor in the areas of quality and productivity of the service order and other work activities. It also should enable the manager to respond more readily to higher level management inquiries concerning the technical and administrative health of the frame operation.

6. DOCUMENTATION

6.01 The proper maintenance of a distributing frame depends upon the availability of the required documentation. A copy of all applicable documents should be available to the distributing frame force. (Reference should be made to BR 201-200-001 for documentation that pertains to distributing frame operations.)

7. RECORDS

A. Retention of Records

7.01 When a frame is located in a Frame Control Center (FCC) environment, all forms should be maintained in the FCC. Copies of the forms and records may be maintained also in the local office depending on local management requirements.

7.02 The forms described in this practice have been designed for containing useful information in an orderly fashion. The minimum length of time each record should be kept may be found in the local company record retention schedule. Unless otherwise specified, no records should be maintained for more than one month. If it appears advisable to retain certain records for a longer period of time than is indicated in the retention schedule, action should be taken to have the retention requirements changed. The normal procedure should be to retain a record no longer than its possible usefulness.

7.03 A simple method for retaining these records is to establish large folders or mailing envelopes, each marked with the month and year. As each report month ends, records may be removed from binders and filed in the appropriately marked envelopes or folders. At the same time, records in an envelope with a date exceeding local company retention requirements should be discarded.

B. Ordering Information

7.04 Forms should be ordered using procedures applicable to the local company.

7.05 Table F provides a description of all forms associated with this plan.

C. Requirements

7.06 Table G provides a list of all forms and their requirements for the Frame Controlled Maintenance Plan (FCMP), Frame Force Management Plan (FFMP), the Frameworker Performance Plan (FPP), and the Frame Performance Measurement Plan (FPMP).

(Insert Your Company Logo)

Frameworker Work Evaluation Sheet

EO-6954
(E 6954)
(8-86)

Employee Name	Office	Date
Date Reviewed With Employee	Supervisor	☐ Inspection ☐ Observation

Distributing Frames	Item Count	No. Items Inspected	No. Items Satisfactory	Source S.O. No., Etc.	Remarks
Jumper Placement	1 Per Jumper				
Proper Termination	2 Per Jumper				
Jumper Removal	1 Per Jumper				
T-Zone	1 Per Frame				

Equipment Frames & Wire Bays	Item Count	No. Items Inspected	No. Items Satisfactory	Source S.O. No., Etc.	Remarks
Jumper Placement	1 Per Jumper				
Jumper Removal	1 Per Jumper				

Other	Item Count	No. Items Inspected	No. Items Satisfactory	Source S.O. No., Etc.	Remarks
Tests	1 Per Line				
Intercept	1 Per Line				
Coils And Special Protection	1 Per Line				
Records	1 Per Line				
Filino	1 Per Order				
	Total				

Follow Up Required ☐ Yes ☐ No	Date Reviewed By 2nd Level

Additional Remarks

BR 201-200-014

Figure 1. Frameworker Work Evaluation Sheet and Definition of Terms—Form EO-6954 (3.08, 3.10)

EO-6954
(E 6954)
Reverse
(8-86)

Definition Of Terms

BSP Requirements Are The Standard For Inspection Items

Distributing Frames	MDF, LDF, IDF, Etc.
Equipment Frames Wiring Bays	N.G., BLK, RLY., TRANSL., Number Network, Etc.
Jumper Placement	The Entire Jumper Has Proper Slack, Dress And Is Using **Routing** Rings And **Fanning** Strips Correctly. Count 1 Item Inspected Per Jumper. Count 1 Item Satisfactory Only When The Entire Jumper Meets Requirements. If One End Is Incorrect The Entire Item Is Unsatisfactory.
Proper Termination	All Leads In The Jumper Should Be Terminated Per BR/BSP. If Both Ends Are Examined, Count 2 Items Inspected. Count 1 Item Satisfactory For Each End Of The Jumper In Which All Leads Are Properly Terminated, i.e., **Max** Satisfactory Is 2 Per Jumper.
Jumper Removal	Jumper Completely Removed And Related Lugs At Both Ends Of Jumper Cleaned. Count 1 Item Satisfactory Only When **Both** Locations Of Previous Termination Are Acceptable.
T-Zone	**Caution** - The Inspection Should Be Made As Soon As Possible Following Order Completion To Justify Responsibility For Any Defects Upon The Frameworker Under Inspection. The Maximum Horizontal MDF T-Zone Area Should Be Composed Of Three (3) Zones As Follows: (1) 20 Rows Of Lugs To The Left Of The Work Location, (2) 20 Rows Of Lugs To The Right Of The Work Location, (3) 20 Rows Of Lugs Immediately Below The Work Location. On The Vertical Side Of Conventional Frames (VMDF) The T-Zone Area Should Be Composed Of Two (2) Zones As Follows: (1) 20 Rows Of Lugs Immediately Above The Work Location, (2) 20 Rows Of Lugs Immediately Below The Work Location. The T-Zone Area Should Be Determined Locally (See BR 201-200-013, Paragraphs 3.13 And 3.14). Count 1 Item Per Line Inspected For Each Frame Examined, i.e., Count 1 Item Per Line Satisfactory For Each Frame, Irregardless Of The Number Of Jumpers Or Terminations Found Free Of Defects.
Tests	Count 1 Item Inspected For Each Line Requiring A Test. Count 1 Item Satisfactory For Each Line Having All Required Order Completion Tests Performed.
Intercept	Count 1 Item Inspected For Each Line Examined. Count 1 Item Satisfactory For Each Line Correctly Intercepted.
Coils And Special Protection	Count 1 Item Inspected For Each Line Examined. Count 1 Item Satisfactory If Proper Coils Are In Place And Special Protection, If Required, Is In Use.
Records	Count 1 Item Inspected Per Line Examined. Count 1 Item Satisfactory Only, When The Service Order, Equipment Transfer, Etc., Has Been Correctly Signed Off And Logged By The Frameperson.
Filing	Count 1 Item For Each Order Examined. Count 1 Item Satisfactory Only When The Service Order, Transfer, Etc., Has Been Filed In Accordance With BR 201-200-010.
Follow Up Required	A Check (✓) Should Be Made In Either The "Yes" Or "No" Box On Each Work Evaluation Sheet. If Follow Up Action Is Required, The "Additional Remarks" Should Be Used For Recording The Appropriate Information.
Date Reviewed By 2nd Level	This Space Is To Be Used By The Manager For Recording The Date On Which He/She Evaluated Those Work Items Previously Inspected By The Supervisor.

Figure 1. Frameworker Work Evaluation Sheet and Definition of Terms (Reverse)—Form EO-6954 (3.08, 3.10)

(Insert Your Company Logo)

Frameworker Performance Plan
Quality

EO-6955B (E-6955B) (8-84)

Employee Name ①		Months In Title ②	Shift ③	Month/Year ④
Supervisor ⑥			Office ⑤	

Day	Col. A No. Items Expected	Col. B No. Found Satisfactory	Col. C Percent Found Satisfactory Col. B / Col. A × 100	Remarks
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
T				

Monthly % Satisfactory: $\frac{\text{Total Col. B}}{\text{Total Col. A}} \times 100 =$ _____

At the beginning of the month, enter the following information on the appropriate lines in the heading:

① Frameworker's name

② Frameworker's experience in job title

③ Shift (e.g., day, evening, night)

④ Month and year

⑤ Office name or location

⑥ Frame supervisor's name.

Record, as inspections are made, the following information in the appropriate columns:

Note: It is suggested that a greater number of observations be made when possible to help identify individuals that may need training. This is particularly true with newer employees.

Column A Enter total number of items in Form EO-6954

Column B Enter total number of items found satisfactory in Form EO-6954

Column C Compute the percent found satisfactory

Enter any explanatory information in the Remarks column.

At the end of the month:

(1) Total columns A and B and enter totals in line T

(2) Compute monthly percent satisfactory.

Figure 2. Frameworker Performance Plan-Quality—Form EO-6955B (3.10)

4.0 DISTG FRAMES

4.1 DISTG FRAMES; CONVENTIONAL

FOR ALL UNITS

201-220-501 (1/0)	A	CROSS CONNECTION WIRES	MR*	----
	B	CONNECTIONS TO TERMINALS	MR*	----
	C	DISTRIBUTING RINGS & FANNING STRIPS	MR*	----
	D	TERM STRIP & LUGS	MR*	----
	E	CABLING	MR*	----
	F	JACK BOXES	MR*	----
	G	PROT SPGS, JK SPGS & PROT, JK, OR CONN LUGS	MR*	----
	H	PROTECTOR BLOCKS	MR*	----
	I	HEAT COILS	MR*	----
	J	BAT. & GRD BINDING POSTS	MR*	----
	K	GROUND CONNECTIONS	MR*	----
	L	MARKING & DESIGNATION CARDS	MR*	----
	M	S.O. CORD HOOKS	MR*	----
	N	S.O. & TESTS CORDS	MR*	----
	O	MISSING & DEFECTIVE PARTS	MR*	----
	P	STORAGE CABINETS & END GUARD STG SPACES	MR*	----
	Q	SPECIAL SERVICE DEVICES	MW 6M	----
	R	REVERSE DEVICES	MR 2M	----
	S	TALK CIRCUITS	MR*	----
	T	ELECTRIC OUTLETS	MR*	----
	U	TESTING DEVICES	MR*	----

TROUBLE TESTS

201-206-501 (2/0)	A	RESISTANCE TEST	TT	----
	B	SHORT-CIRCUIT TEST	TT	----

4.2 DISTG FRAMES; ESS TYPE MODULAR

FOR ALL UNITS

201-221-501 (1/0)	A	CROSS CONNECTION WIRES	MR*	----
	B	CONNECTIONS TO TERMINALS	MR*	----
	C	FANNING STRIPS & WIRE RETAINERS	MR*	----
	D	CONNECTING BLOCKS & TERMINALS	MR*	----
	E	UPPER EXPRESS WIRE TROUGH	MR*	----
	F	LOWER EXPRESS WIRE TROUGH	MR*	----
	G	CABLING	MR*	----
	H	JACK PANELS	MR*	----
	I	JACKS	MR*	----
	J	CONNECTIONS & PROTECTORS	MR*	----
	K	BATTERY & GROUND TERMINALS	MR*	----

Figure 3. Equipment Test List Format (3.27, 3.35)

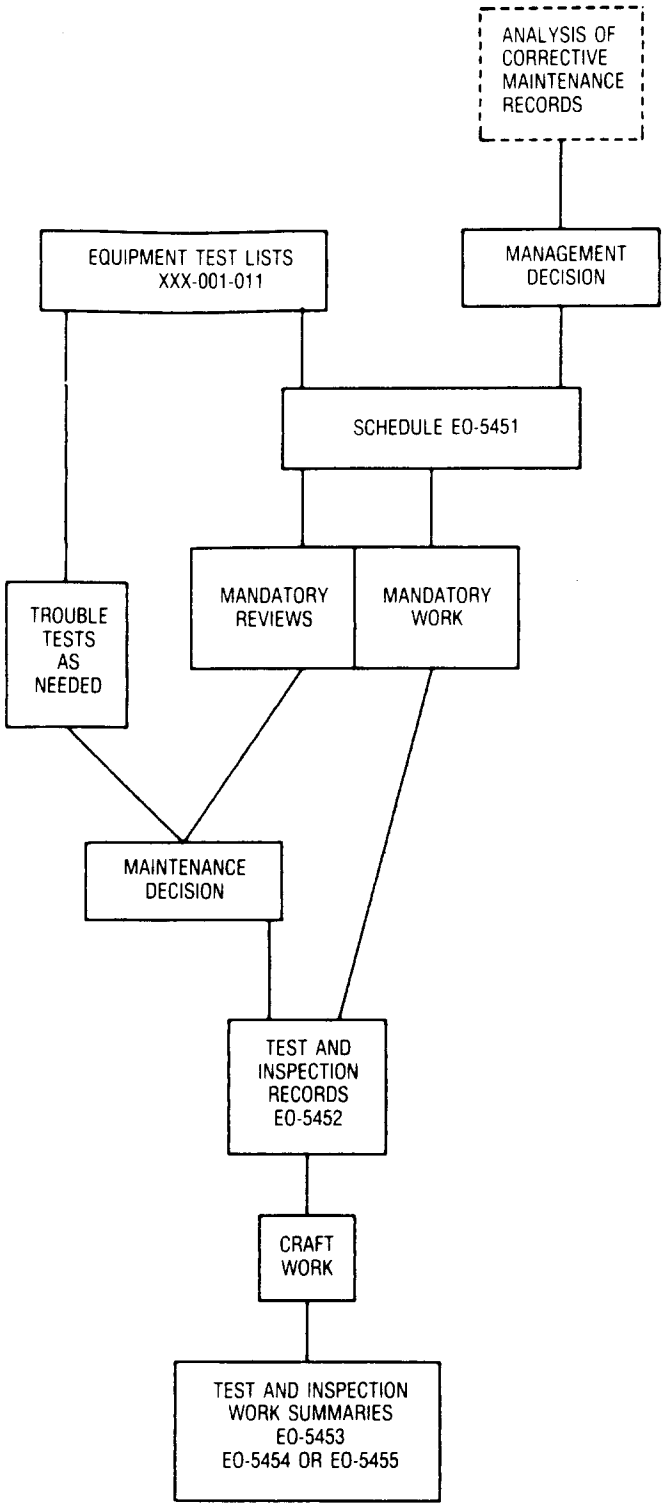

Figure 4. Preventive Maintenance Diagram (3.27)

(Insert Your Company Logo)

Equipment Test List

EO 5450
(E 5450)
(7 84)

BSP/B R	ISS	Test Or Reqt.	Equipment And Work Description	Class	Freq.	Job No.

Figure 5. Equipment Test List—Form EO-5450 (3.37)

(Insert Your Company Logo)

Preventive Maintenance Schedule

EO-5451
(E 5451)
(7-84)

Year ______

Office	No. Sheets	Sheet No.

Job No.	Equipment And Work Description	Class	Freq.	Number Units	Min. Per Asgn.	January				February				March				April				May				June				July				August				September				October				November				December			
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
				Total Hours Per Period																																																	

BR-201-020-510

Figure 6. Preventive Maintenance Schedule—Form EO-5451 (3.38, 3.39)

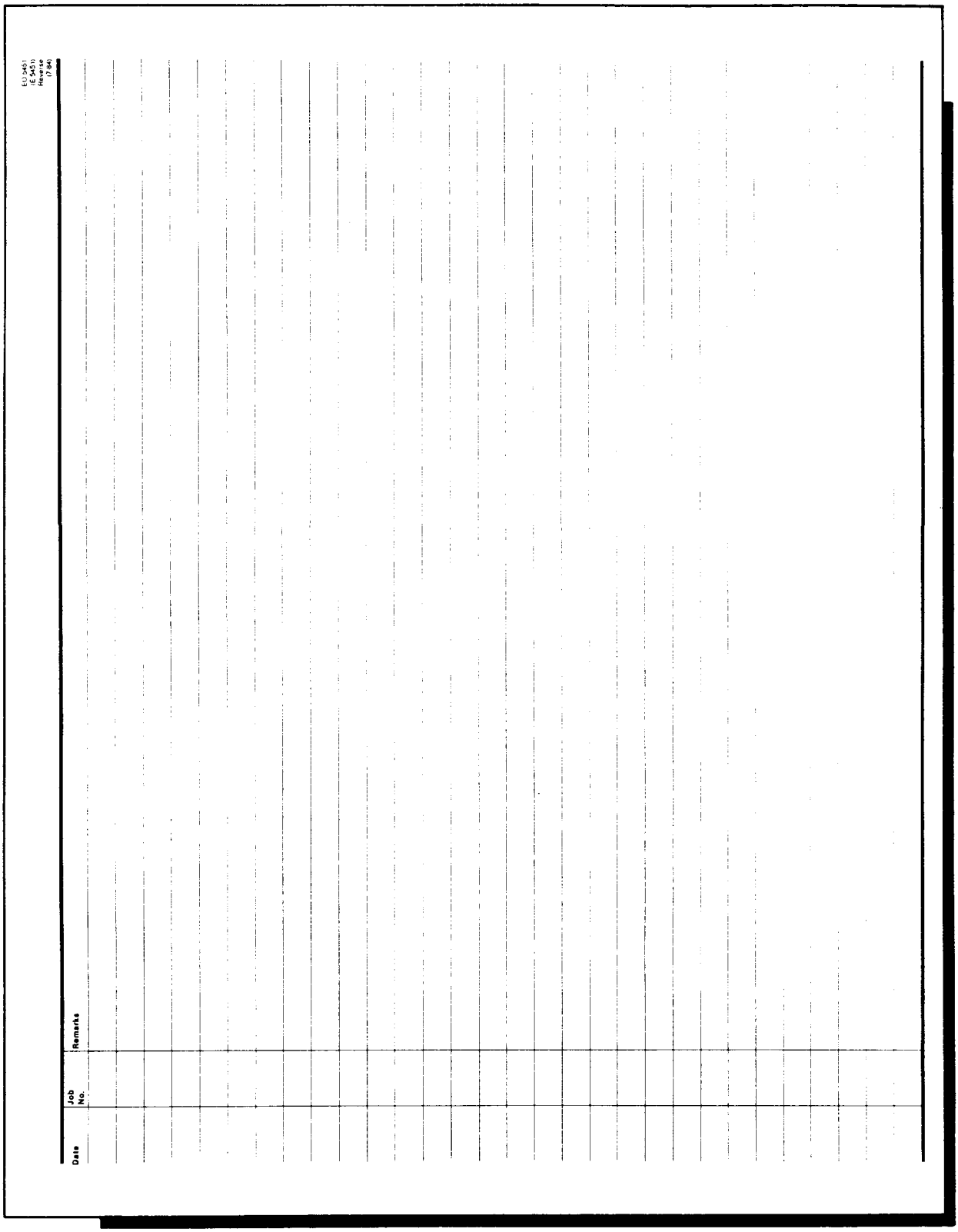

Figure 6. Preventive Maintenance Schedule—Form EO-5451 (Reverse) (3.38, 3.39)

(Insert Your Company Logo)

Test And Inspection Work Order And Record

EO-5452
(E-5452)
(2-86)

Office (A)

Assignment Or Job No. (B)

Assignment Data

BR/BSP No. ← (C) → Test Letter Or Par.

Equipment (D)

Work Description (E)

From Eqpt. Unit	To Eqpt. Unit	Total Units (G)	Shift (H)
(F)			

Assigned To (I)	To Be Started (J)	To Be Completed

Progress Report

Date	From Eqpt. Unit		To Eqpt. Unit		Time Spent (Minutes) Test	Repair	By
			(N)				

Work Record

Eqpt. Unit (K)	Trouble Appearance (L)	Action Taken (M)	Repair Time	By

NOTE	EXPLANATION
A	Central Office Identification
B	Locally Assigned Number and/or Letter to Identify Assignment or Job by Type of Work, Shift, Equipment, Etc.
C	Reference Information
D	Identification of Equipment
E	Description of Work to be Performed. Limited Trouble Might be Expected on this Test. Use of this Form on this Test Would be Optional
F	For Designating the First and Last Circuit or Equipment Assigned by Work Order
G	Total Units this Assignment
H	"Shift" Work to be Performed (Day, Evening, Night)
I	Show Trick Designation or Initials of Employee Work Assigned to
J	Show Date and/or Time Work is Scheduled to be Started and Completed
K	Equipment Unit on Which Trouble is Indicated
L	Details of Trouble Appearance
M	Details of Action Taken to Clear Trouble, Time Consumed, Worker's Initials
N	Show Worker's Initials and Summary of Time Spent Testing and Repairing by Date and Equipment Involved
O	For Totaling Trouble Appearances on this Record

Total Trouble Appearances (O) | No. Sheets | Sheet No.

BR-218-020-510

Figure 7. Test and Inspection Work Order and Record—Form EO-5452 (3.40)

EO-5452
(E-5452)
Reversse
(2-86)

Eqpt. Unit		Trouble Appearance	Action Taken	Repair Time	By

Total Trouble Appearances

Figure 7. Test and Inspection Work Order and Record—Form EO-5452 (Reverse) (3.40)

(Insert Your Company Logo)

Test And Inspection Summary

EO-5453
(E-5453)
(7-86)

Office (A)	Assignment Or Job No. (B)
BR/BSP No. And Test Letter Or Par. (C)	Equipment (D)
Work Description (E)	

From (F)	To (F)	Total Units (G)	Test (H) CLS	Test (H) Freq	Estimated Time (I) Per Unit	Estimated Time (I) Per Asgn.

Date (J) EO-5452 Issued	Work Compl.	By (K)	Troubles (L)	Time Spent Test (M)	Time Spent Repair (M)	Summary Of Tests, Inspections, Samples, Reviews (N)

NOTE	EXPLANATION
A	Designation of Central Office
B	Locally Assigned - Cross-reference to Equipment Test List
C	Test Reference Information
D	Description of Equipment
E	Description of Test or Inspection
F	Show First and Last Unit of Equipment on this Assignment
G	Total Circuits Covered by this Assignment
H	Test or Inspection Class and Frequency - From Equipment Test List
I	Estimated Test Time Per Unit and Assignment
J	Date EO-5452 Issued and Date this Assignment Completed
K	Worker's Initials
L	Total Trouble Appearances - Taken From EO-5452
M	Total Test and Repair Time - Taken From EO-5452
N	Space for Summarizing Trouble Detail - Shown on EO-5452 When Used

BR 201-200-010

Figure 8. Test and Inspection Summary—Form EO-5453 (3.42, 3.44)

EO-5453
(E-5453)
Reverse
(8-84)

Date		By	Troubles	Time Spent		Summary Of Tests, Inspections, Samples, Reviews
EO-5452 Issued	Work Compl.			Test	Repair	

Figure 8. Test and Inspection Summary—Form EO-5453 (Reverse) (3.42, 3.44)

(Insert Your Company Logo)

Test And Inspection Summary

EO-5454
(E-5454)
(1-85)

Office	Assignment Or Job No.
BSP No. And Test Letter Or Par.	Equipment
Work Description	

From	To	Total Units	Test		Estimated Time	
			CLS	Freq	Per Unit	Per Asgn.

Date		By	Troubles	Time Spent		Summary Of Tests, Inspections, Samples, Reviews
EO-5452 Issued	Work Compl.			Test	Repair	

EO-5454
(E-5454)
Reverse
(1-85)

Date		By	Troubles	Time Spent		Summary Of Tests, Inspections, Samples, Reviews
EO-5452 Issued	Work Compl.			Test	Repair	

Figure 9. Test and Inspection Summary—Form EO-5454 (3.42, 3.45)

(Insert Your Company Logo)

Test And Inspection Summary
Multiple Job Assignments

EO-5455 (E-5455) (7-86)

Office (A) | Assignment Or Job No. (B)
Test (F) CLS | Freq
Estimated Time (G) Per Unit | Per Asgn.
BR/BSP No. And Test Letter Or Par (C)
Equipment (D)
Work Description (E)

Job No.	Mo. Due	From Eqpt./Unit	To Eqpt./Unit	No. Units	Date (L)		By	No. Of TBL.	Time Spent (O)		Date		By	No. Of TBL.	Time Spent (O)		Date		By	No. Of TBL.	Time Spent (O)		Date		By	No. Of TBL.	Time Spent (O)		Date		By	No. Of TBL.	Time Spent (O)	
					EO-5452 Issued	Work Compl.			Test	Repair	EO-5452 Issued	Work Compl.			Test	Repair	EO-5452 Issued	Work Compl.			Test	Repair	EO-5452 Issued	Work Compl.			Test	Repair	EO-5452 Issued	Work Compl.			Test	Repair
(H) 1	(I)		(J)	(K)			(M)	(N)				(L)	(M)	(N)				(L)	(M)	(N)				(L)	(M)	(N)				(L)	(M)	(N)		
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BR 201-200-013

NOTE	EXPLANATION
A	Designation of Central Office
B	Locally Assigned and Cross-Referenced to Equipment Test List
C	Test Reference Information
D	Description of Equipment
E	Description of Tests or Inspections
F	Test or Inspection Class and Frequency – From Equipment Test List
G	Estimated Test Time per Unit and Assignment
H	Number Suffixed to Assignment or Job No. to Identify Individual Assignments
I	Month Work Assignment is Scheduled for Review, Sample or Completion
J	Show First and Last Unit of Equipment for Each Assignment
K	Enter Number of Units Per Assignment
L	Enter Date Form EO-5452 was Issued and Date the Assignment was Completed, Reviewed or Sampled
M	Worker's Initials
N	Total Trouble Appearanced - Taken From Form EO-5452
O	Total Test and Repair Time - Taken From Form EO-5452

Figure 10. Test and Inspection Summary, Multiple Job Assignments—Form EO-5455 (3.42, 3.46)

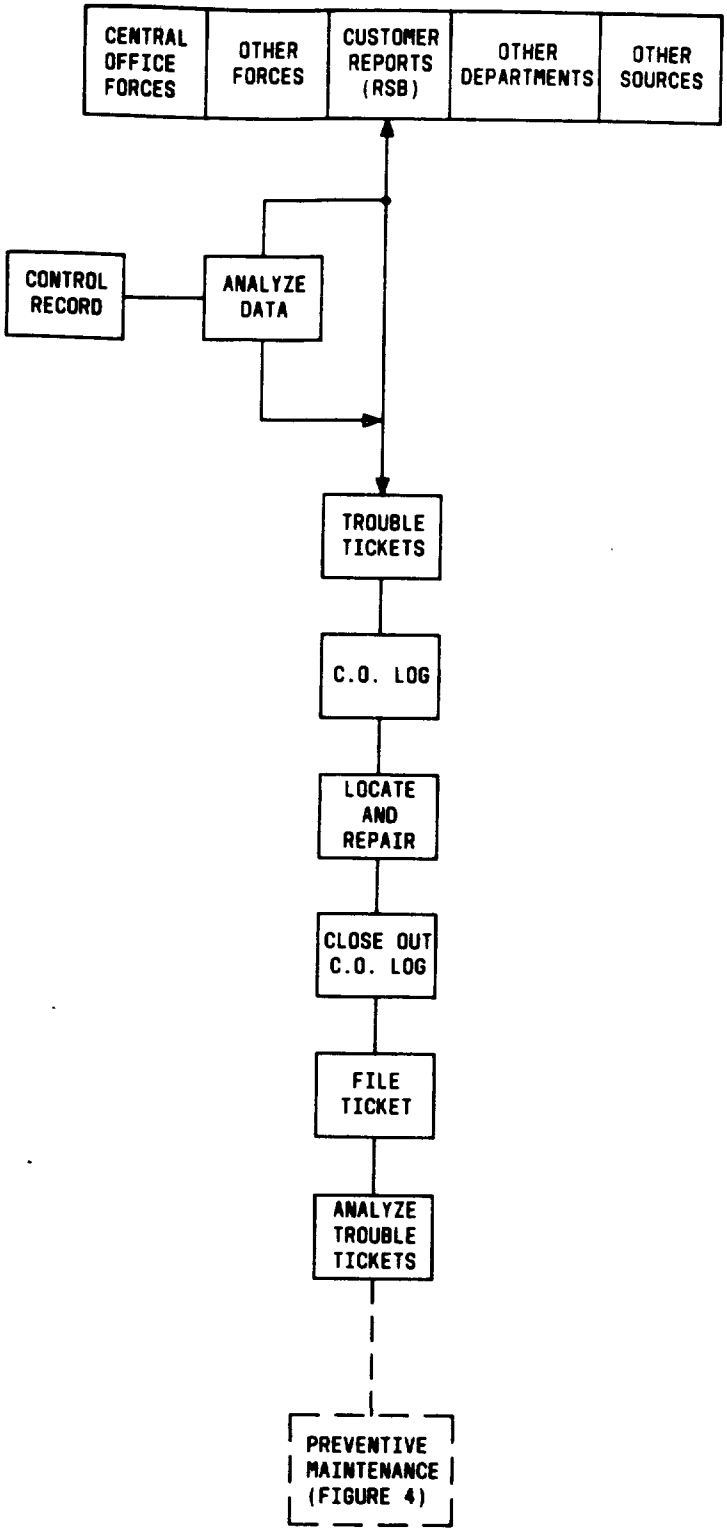

Figure 11. Corrective Maintenance Diagram (4.02)

(Insert Your Company Logo)

Frame Control Record

EO-5497
(E-5497)
(1-85)

Office ← (1) → District Month (2)

Date	Daily Total Frame Codes	Sub SQ.	Cum	Incpt. Errors	Trouble Report By Type Of Frame					Trouble Report Trend By Type															
					MDF	IDF LDF	NG BR	TRN-SL NN	TDF	Cross Connection					Terminals			Incpt	Protection			Order Errors		
										Wrong	Cut	Bro-ken	Loose	Disc	Solder Cross	Wire Cross	Other		Coils Out	Coils Other	Car-bons			
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	←					(13)						→	← (14)	→
10																								
20																								
30																								
31																								
Total																								
10 Days																								
20 Days	(15)																							
Total																								

NOTE	EXPLANATION
1	FRAME DESIGNATION AND DISTRICT REPORT PERIOD
2	MONTH WHEN THE TROUBLES OCCURRED
3	DAY OF MONTH WHEN TROUBLES OCCURRED
4	DAILY TOTAL FRAME CODES
5	NUMBER OF DAILY SUBSEQUENT REPORTS FROM TREAT
6	CUMULATIVE TOTAL OF DAILY TOTAL FRAME CODES AND SUBSEQUENT REPORTS
7	INTERCEPT ERRORS
8	TOTAL NUMBER OF TROUBLES FOUND ON THE "MAIN DISTRIBUTING FRAME"
9	TOTAL NUMBER OF TROUBLES FOUND ON THE "LINE DISTRIBUTING FRAME" OR THE "INTERMEDIATE DISTRIBUTING FRAME"
10	TOTAL NUMBER OF TROUBLES FOUND ON THE "BLOCK RELAY FRAME" OR " NUMBER GROUP FRAME"
11	TOTAL NUMBER OF TROUBLES FOUND ON THE "TRANSLATOR FRAME" OR "AND NUMBER NETWORK FRAMES"
12	TOTAL NUMBER OF TROUBLES FOUND ON THE "TOLL OR TRUNK DISTRIBUTING FRAME"
13	THESE COLUMNS ARE USED TO STROKE THE DAILY TOTAL OF TROUBLES BY CAUSE
14	SPARE COLUMNS FOR LOCAL USE
15	10 DAY, 20 DAY AND TOTAL MONTHLY OBJECTIVES FOR TROUBLE REPORTS BY TYPE OF FRAME

Note: Number Of Daily Subsequent Reports From Treat Are Listed In Column C. Column D Is Cumulative Total Of Daily Total Frame Codes And Subsequent Reports.
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Figure 12. Frame Control Record—Form EO-5497 (4.06, 4.07)

(Insert Your Company Logo) **Distributing Frame Trouble Ticket** EO-10260 (E-10260) (8-84)

Tel. No.	Line Equip.					Frame ⑳		
CA. & PR. Assoc. Equip.	Other Equip.	Date ①	Frame Loc. ②	Tkt. No. ③				
Details Of Reported Trouble ⑪		Rept. By ④	Loc. ⑤	T / M ⑥		Cross-Connects	Wrong	
		Rcvd. By ⑦	Time ⑧	Class ⑨	Commitment Time ⑩		Cut	
							Broken	㉑
							Loose	
		Referred					Disconnect	
		To ⑬	Time	Date	Tkt. No.	Term	Solder Cross	
							Wire Cross	㉒
Action Taken And Results Obtained ⑫							Other	
		Cleared			Cause Code		Intercept	㉓
		By ⑭ To	Time	Date ⑮	⑯	Prot.	Coils - Out	
							Coils - Other	㉔
		Wk. Time ⑰	Fmn. Ck. ⑱	Disposition Code ⑲			Carbons	
							Order Error	㉕

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1 - DATE REPORT RECEIVED AT FRAME LOCATION.
2 - CENTRAL OFFICE NAME OR FRAME DESIGNATION.
3 - SERIAL NUMBER OF TICKET.
4 - INITIALS OF PERSON REPORTING THE TROUBLE.
5 - ORIGIN OF REPORT OR LOCATION OF PERSON MAKING REPORT.
6 - CHECK "T" OR "M".
7 - INITIALS OF PERSON RECEIVING REPORT.
8 - TIME REPORT RECEIVED AT FRAME LOCATION. USE 24-HOUR CLOCK.
9 - REPORT CLASS.
10 - COMMITMENT TIME-TIME THAT THE REPAIR SERVICE BUREAU HAS COMMITTED AND GIVEN TO THE SUBSCRIBER TO HAVE SERVICE RESTORED.
11 - DETAILS OF TROUBLE REPORT (INCLUDE IF LINE IS OUT OF SERVICE).
12 - DETAILS OF ACTION TAKEN, INCLUDING REFERRALS.
13 - INITIALS OF PERSON REFERRED TO PLUS DATE, TIME, AND THE TICKET NUMBER, IF TROUBLE IS REFERRED TO ANOTHER WORK FORCE.
14 - INITIALS OF PERSON CLEARING TROUBLE AND PERSON REPORT CLEARED TO PLUS THE TIME.
15 - DATE REPORT CLOSED OUT.
16 - CENTRAL OFFICE CAUSE CODE.
NOTE: REFER TO THE CUSTOMER TROUBLE REPORT ANALYSIS PLAN (CTRAP), BR 660-100-013, OR THE TROUBLE REPORT EVALUATION AND ANALYSIS TOOL (TREAT) BR 660-169-013.
17 - TIME SPENT ON THIS TROUBLE.
18 - FOREMAN' S INITIALS UPON REVIEW OF TICKET.
19 - CENTRAL OFFICE DISPOSITION CODE (SEE ITEM 16-NOTE).
20 - FRAME DESIGNATION (ABBREVIATION) AND EXACT LOCATION.
21 - CROSS-CONNECTS-APPLIES TO THE FOLLOWING ITEMS WHEN TROUBLE IS ATTRIBUTED TO A CROSS-CONNECTION ON ANY C.O. DISTRIBUTING FRAME.
- WRONG - CROSS-CONNECTION PLACED WRONG ON DISTRIBUTING FRAME.
- CUT - JUMPER CUT OFF IN ERROR.
- BROKEN - ADJACENT FRAME ACTIVITY, JUMPER FOUND TO BE BROKEN.
- LOOSE - TERMINATION IMPROPERLY MADE WHICH ALLOWS CONNECTOR TO BE OPEN.
- DISCONNECT - WHEN CROSS-CONNECTION HAS ACTUALLY BEEN DISCONNECTED OR IS MISSING.

22 - TERMINAL-WHEN TROUBLE IS LOCATED ON FRAME TERMINAL AND IS ATTRIBUTED TO ONE OF THE FOLLOWING ITEMS:
- SOLDER CROSS - WHEN SOLDER IS FOUND TO CAUSE A SHORT CIRCUIT BETWEEN ADJACENT TERMINALS.
- WIRE CROSS - WHEN WIRE IS FOUND TO CAUSE A SHORT CIRCUIT BETWEEN ADJACENT TERMINALS.
- OTHER - ALL OTHER CASES OF TROUBLES.

23 - INTERCEPT-ANY TIME TROUBLE IS CORRECTED BY REPAIRING INTERCEPT WIRING OR REPLACING INTERCEPT STRAP OR TOOL.
24 - PROTECTION-WHEN TROUBLE IS FOUND TO BE ATTRIBUTED TO ONE OF THE FOLLOWING ITEMS OR PROECTION:
- COILS OUT - WHEN COILS ARE FOUND TO BE UNPLUGGED OR PULLED OUT.
- COILS OTHER - WHEN COILS ARE FOUND TO BE DAMAGED, IMPROPERLY PLACED,ETC.
- CARBONS - WHEN CARBONS ARE BURNT, BROKEN, IMPROPERLY PLACED, ETC..

25 - ORDER ERROR-WHEN THE FRAME WORK DOCUMENT CONTAINS INFORMATION WHICH MISGUIDES OR MISDIRECTS THE WIRING AND RESULTS IN A SUBSCRIBER CIRCUIT BEING REMOVED FROM SERVICE IN ERROR. THE FRAME WORK DOCUMENT MAY BE SERVICE ORDERS, CABLE TRANSFERS AND OTHER WORK ORDERS.

Figure 13. Distributing Frame Trouble Ticket—Form EO-10260 (4.09)

(Insert Your Company Logo) **Distributing Frame Trouble Ticket** EO-10260 (E-10260) (8-86)

Tel. No. 565-3449	Line Equip. 17-82					Frame HMDF 17-82		
CA. & PR. Assoc. Equip. 141394	Other Equip.	Date 2/1/85	Frame Loc. MAIN ST.	Tkt. No. 1				
Details Of Reported Trouble		Rept. By CFV	Loc. LTP	T ✓ / M		Cross-Connects	Wrong	
NDT O/S TEST RING SIDE OPEN IN		Rcvd. By WJB	Time 1010	Class A	Commitment Time 12:00		Cut	
		Referred					Broken	
		To	Time	Date	Tkt. No.		Loose	
							Disconnect	✓
Action Taken And Results Obtained		Cleared			Cause Code	Term	Solder Cross	
RING JUMPER NOT SOLDERED AT HMDF - SOLDERED - RETEST OK		By WJB / To KLH	Time 10:25	Date 2/1/85	110		Wire Cross	
		Wk. Time 15 MIN.	Fmn. Ck. DLS	Disposition Code 0534			Other	
							Intercept	
						Prot.	Coils - Out	
							Coils - Other	
							Carbons	
							Order Error	

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A customer reports "no dial tone." The test center tests one side open in the central office and refers the trouble to the frame for correction. Investigation of the frame connections discloses that the ring side had not been soldered on the HMDF. The connection is repaired and the ticket closed out to the test center.

Figure 14. "T" Ticket—Wiring CO Force (4.13)

(Insert Your Company Logo) **Distributing Frame Trouble Ticket** EO-10260 (E-10260) (8-86)

Tel. No. 236-1006	Line Equip. 06-07-09					Frame		
CA. & PR. Assoc. Equip. 31418	Other Equip.	Date 9/12/84	Frame Loc. 42nd ST	Tkt. No. 2				
Details Of Reported Trouble		Rept. By ABC	Loc.	T ✓ / M		Cross-Connects	Wrong	
NDT O/S TEST OPEN "OUT"		Rcvd. By EAP	Time 1330	Class A	Commitment Time 1530		Cut	
		Referred					Broken	
		To	Time	Date	Tkt. No.		Loose	
							Disconnect	
Action Taken And Results Obtained		Cleared			Cause Code	Term	Solder Cross	
MISSING HEAT COILS ON VMDF. COILS REMOVED PER AC ON LTDC 1210, SEE EO-6625 DATED 9/12/84		By EAP / To ABC	Time 1340	Date 9/12/85	154		Wire Cross	
		Wk. Time 10 MIN.	Fmn. Ck. BT	Disposition Code 0531			Other	
							Intercept	
						Prot.	Coils - Out	✓
							Coils - Other	
							Carbons	
							Order Error	

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Customer reports "no dial tone." Tester tests line open out and asks for a cord on cable pair at VMDF. Investigation by frame worker discloses that the heat coils are missing from pair. After checking the daily "speaker activity log," he discovers that the coils were removed per "AC" on LTD.

Figure 15. "T" Ticket—Protection Other Force (4.13)

(Insert Your Company Logo) **Distributing Frame Trouble Ticket** EO-10260 (E-10260) (8-86)

Tel. No. 563-1456	Line Equip. 842-05					Frame HMDF 842-05			
CA. & PR. Assoc. Equip.	Other Equip.	Date 2/2/85	Frame Loc. 1st AVE		Tkt. No. 3				
Details Of Reported Trouble		Rept. By GW	Loc. LTD		T ✓ M	Cross-Connects	Wrong		
NDT O/S S/C IN		Rcvd. By TM	Time 0930	Class A	Commitment Time 1135		Cut		
		Referred To	Time	Date	Tkt. No.		Broken		
							Loose		
							Disconnect		
						Term	Solder Cross	✓	
							Wire Cross		
							Other		
Action Taken And Results Obtained		Cleared			Cause Code		Intercept		
SOLDER CROSS HMDF		By TM / To GW	Time 10:00	Date 2/2/85	150	Prot.	Coils - Out		
		Wk. Time 30 MIN.	Fmn. Ck. VM	Disposition Code 0535			Coils - Other		
							Carbons		
							Order Error		

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Customer report of "no dial tone" is referred to frame. The trouble is a solder cross on the HMDF.

Figure 16. "T" Ticket—Wiring Environment (4.13)

(Insert Your Company Logo) **Distributing Frame Trouble Ticket** EO-10260 (E-10260) (8-86)

Tel. No. 565-9349	Line Equip. 117-08					Frame NTF			
CA. & PR. Assoc. Equip.	Other Equip.	Date 8/16/84	Frame Loc. FLEMINGTON		Tkt. No. 4				
Details Of Reported Trouble		Rept. By KC	Loc. LTD		T ✓ M	Cross-Connects	Wrong		
UNABLE TO MAKE "DDD" CALLS AT TIMES. OPERATOR ASKS FOR CALLING NUMBER TEST OK		Rcvd. By DC	Time 1010	Class A	Commitment Time 1130		Cut		
		Referred To	Time	Date	Tkt. No.		Broken		
							Loose		
							Disconnect		
						Term	Solder Cross		
							Wire Cross		
							Other		
Action Taken And Results Obtained		Cleared			Cause Code		Intercept		
VERIFIED ALL WIRING ON LDF AND ON THE ANI NUMBER NETWORK WITH NTF		By DC / To KC	Time 1025	Date 8/16/84	150	Prot.	Coils - Out		
		Wk. Time 15 MIN.	Fmn. Ck. EF	Disposition Code 0810			Coils - Other		
							Carbons		
							Order Error		

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Customer reports "unable to make DDD calls at times, operator intercepts and asks for calling number." Tester is able to make DDD calls on this number ok. However, he requests that all the associated wiring be checked. The frame worker's investigation discloses that both the "1DF" and "ANI NN" frame connections are proper.

Figure 17. "T" Ticket—No Trouble Found (4.13)

(Insert Your Company Logo)

Central Office Log

EO-5457
(E-5457)
(2-86)

Office (A) Period (B)

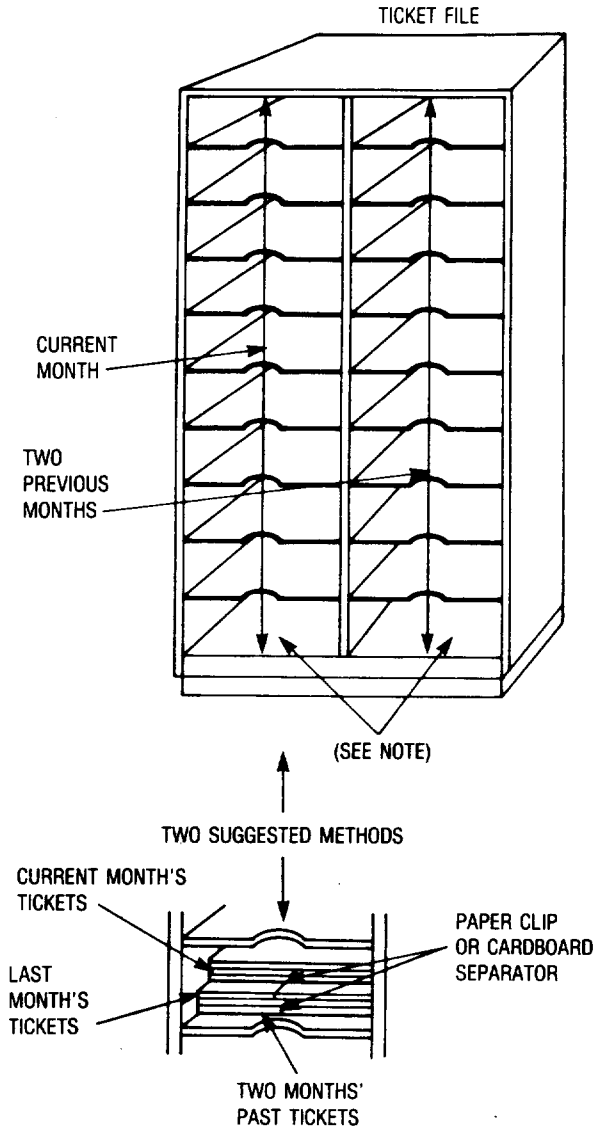
Date (C)	Tkt. No. (D)	Time Recvd. (E)	From Or Report Class (F)	Nature Of Report Or Activity (G)	Disp. To (H)	Closed Out (I)	Eqpt. Group (J)	Cause Code (K)	Disposition Code (K)

NOTE	EXPLANATION
A	Central office name or frame location.
B	Period covered by form.
C	Date report is received.
D	Frame trouble ticket serial number.
E	Time report received.*
F	Trouble report source or report classification.
G	Brief description of report.
H	Initials of individual investigating report.
I	Indicates report closed out. Enter time or date.*
J	Trouble ticket filing information. Enter frame designation.
K	Enter cause code and disposition code. (Refer to Section 660-100-013 if more information is required.)

* Use of 24-hour clocks is suggested.

Reference: BR-190-130-130

Figure 18. Central Office Log—Form EO-5457 (4.18)



TICKET FILE ORDERING INFORMATION:
(QUANTITY) - TICKET ANALYSIS FILE - DRAWING 38-Y-3868
(QUANTITY) - SNAP ON 8G DESIGNATION STRIP,
TICKET ANALYSIS FILE - DRAWING, 38-Y-3868
(QUANTITY) - DIVIDER, TICKET ANALYSIS FILE, DRAWING 38-Y-3868

NOTE:
EACH BIN SHOULD CONTAIN A MAJOR ITEM OF EQUIPMENT (I.E., VMDF, HMDF, NGF, TRNSL, ETC.)

Figure 19. Trouble Ticket File (4.24, 4.25)

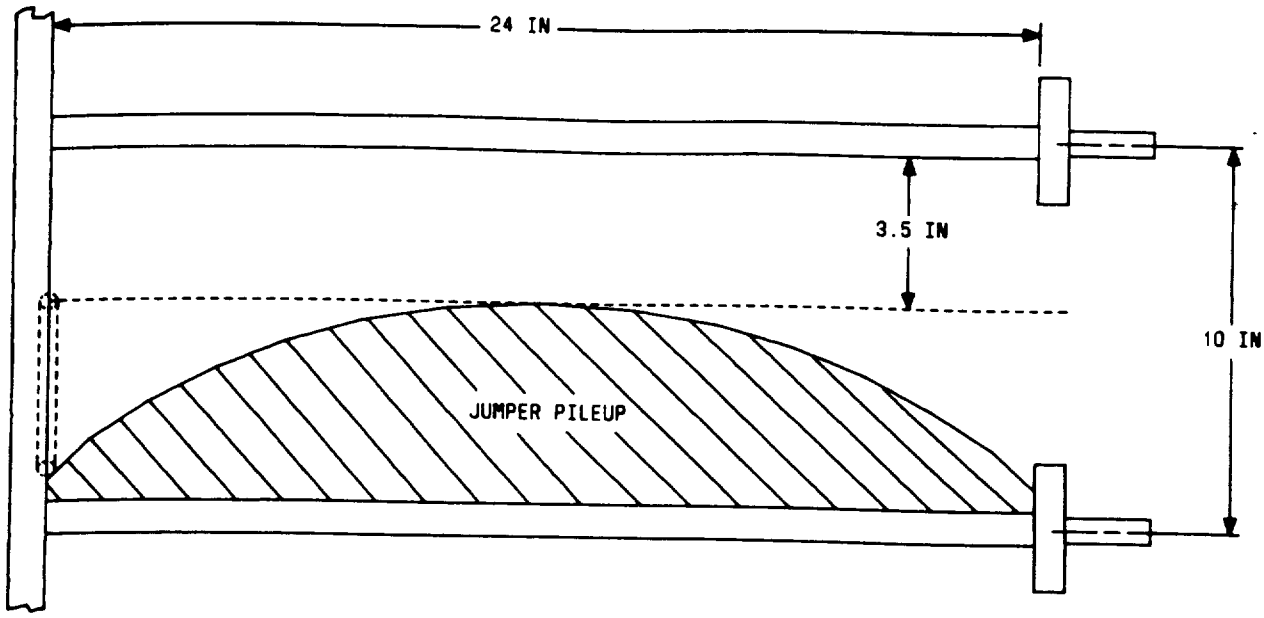


Figure 20. Maximum Jumper Pileup on Horizontal Shelves of a Conventional MDF (5.09)

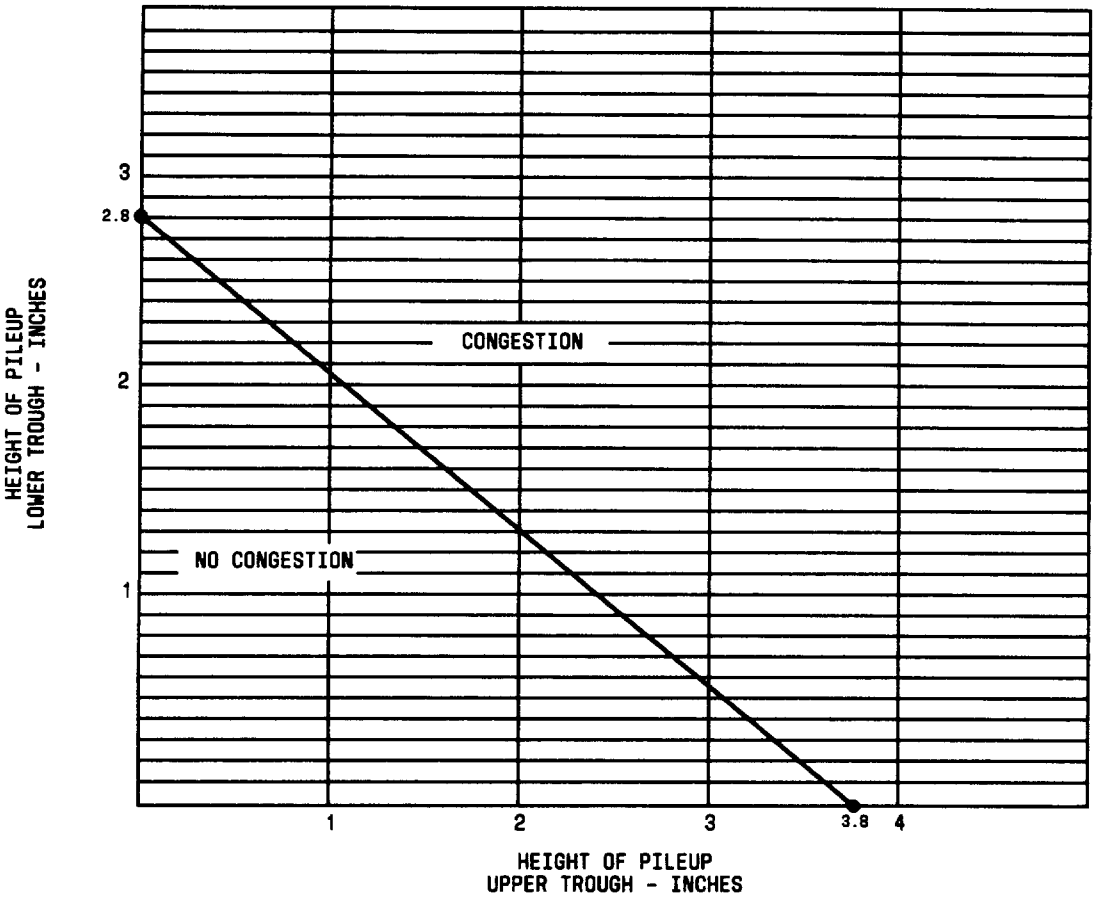


Figure 21. Graph for Determining COSMIC Frame (Without COSMOS) Congestion (5.09)

SAMPLE VER WORKSHEET

CIRCUIT NO. ① 1

② CKT	③ TN-OE	④ CP-TN	⑤ CP-OE	⑥ CP W S	⑦ OE W S	⑧ TN W S

⑨ COMMENT:

⑩ CIRCUIT FOR CP 4909-1839

TN 985-0089
ST WK
TYPE X
OE 013-02-54
ST WK
FR LOC WM1001
CS 1FR
US 1FR
FEA TNNL
CP 4909-1839
ST WK
DATE 03/12/79
FR LOC WM1001

NOTES FOR SAMPLE VER WORKSHEET

① Number of the sample circuit chosen by VER (1-150).
② Total circuit accuracy. All physical relationships on the MDF must match COSMOS. Place a √ if correct, X if discrepancy.
③ TN-OE accuracy. ANA result from the horizontal MDF.
④ CP-TN accuracy. ANA result from the vertical MDF.
⑤ CP-OE accuracy. If either the TN-OE or CP-TN relationship prove discrepant, this relationship must also be a discrepancy.
⑥ CP W/S status matches with COSMOS. Circle the status if correct, X if discrepancy. The facility can be shown correct as working even if it is working on a TN other than shown in COSMOS.
⑦ OE W/S status matches with COSMOS.
⑧ TN W/S status matches with COSMOS.
⑨ Comment space to explain discrepancies and perform LAC and RSB record checks.
⑩ Entire circuit relationship for the selected facility.

Figure 22. Sample VER Work Sheet (5.13)

EXAMPLE OF VERIFICATION RESULTS

CIRCUIT NO. 1

CKT	TN-OE	CP-TN	CP-OE	CP	OE	TN
√	√	√	√	W S	W S	W S

COMMENT: All facility associations and related data are correct.

CIRCUIT NO. 2

CKT	TN-OE	CP-TN	CP-OE	CP	OE	TN
X	√	√	√	W S	W S	W S

COMMENT: All facility associations correct. Related data are incorrect. The comment section should be used to note the incorrect data, (e.g., wrong intercept, improper protection, etc.).

CIRCUIT NO. 3

CKT	TN-OE	CP-TN	CP-OE	CP	OE	TN
√				W S	W S	W S

COMMENT: Spare cable pair (as listed by COSMOS) was spare on the frame and status was correct. Note that this is considered a correct "circuit".

CIRCUIT NO. 4

CKT	TN-OE	CP-TN	CP-OE	CP	OE	TN
X				W S	W S	S*

COMMENT: Spare telephone number listed by COSMOS was not spare. Note that this is considered an incorrect "circuit".

CIRCUIT NO. 5

CKT	TN-OE	CP-TN	CP-OE	CP	OE	TN
X	√	X	X	W S	W S	W S

COMMENT: Cable pair listed by COSMOS was not part of this circuit but it was a working pair.

CIRCUIT NO. 6

CKT	TN-OE	CP-TN	CP-OE	CP	OE	TN
X	√	X	X	**W S	W S	W S

COMMENT: Same as Circuit 5 except cable pair listed by COSMOS as part of working circuit was actually spare on the frame.

---

* X is struck over S.
** X is struck over W.

Figure 23. Example of Verification Results (5.13)

TABLE A

REPORT CLASSIFICATIONS

The major sources of trouble are assigned the following alphabetical designations for ease in identifying report sources on trouble tickets.		
TYPE OF TICKET	**REPORT CLASS**	**REPORT SOURCE**
T	A	Repair Service Bureau
T	B	Network Administration/Operators Services
T	C	Sender or Originating Register
T	D	Alarm
T	E	Trouble Recorder, Trouble Indicator, Tbl. Ticketer
T	J	Other Office or Other Sources of Report
M	No Class	All "Memo" Tickets

TABLE B

CODING "T" TICKETS

TROUBLE CODING SPACES		SITUATIONS
Frame		Enter frame type and location (see Table C for abbreviations) for cases of found trouble and for cases where trouble disappears. If frame is not determined or no trouble is found, enter NTF. Enter REF. OUT (Referred Out) when trouble is referred to another office, PSC, or testboard.
Score one of the following for each case of found trouble.		
Cross-connects	Wrong	Score one when a cross-connection has been determined to be in fault. It may have been placed wrong, cut off due to error, accidentally broken, improperly made connection, or totally disconnected.
	Cut	
	Broken	
	Disconnect	
Terminal	Solder Cross	Score one when the trouble has been determined to be located on the frame terminal (such as solder shorting two terminals, etc.).
	Wire Cross	
	Other	
Intercept		Any time trouble is corrected by repairing intercept wiring or replacing intercept strap or tool.
Protection	Coils Out	Score one for troubles caused by open, grounded, missing, short circuited protection units (heat coils, carbons, etc.).
	Coils Other	
	Carbons	
Order Error		Score when the frame work document (such as service orders, cable transfers, or other work orders) has misguided or misdirected the wiring and it results in a subscriber circuit being removed from service due to error.

TABLE C

DISTRIBUTING FRAME COMPONENT DESIGNATIONS

COMPONENT (FRAME TYPE)	ABBR.
Main Distributing Frame	MDF
Vertical Side of Main Distributing Frame	VMDF
Horizontal Side of Main Distributing Frame	HMDF
Trunk Distributing Frame	TDF
Circuit Distributing Frame	CDF
Line Distributing Frame	LDF
Intermediate Distributing Frame	IDF
Block Relay Frame	BRF
Number Group Frame	NGF
Translator Frame	TRNSL
Message Register Distributing Frame	MRDF
ANI Number Network Frame	ANI
Assignment Distributing Frame	ADF
Traffic Register Frame	TRF
Protector Frame	PF

TABLE D DEFINITIONS

CORRECTIVE ACTION DEFINITIONS

** A Compare OE spare list with ESS dump, 5XB number group frame, 1XB block relay frame, or SXS IDF.

B Compare CP spare list with cable book (ECCR).

** C Compare CP spare list with MDF appearances.

D Compare nonworking TN list with intercept records.

** E Compare nonworking TN list with ESS dump or electromechanical frame appearances.

** F Compare TP spare list with MDF appearances.

** G Compare spare list for miscellaneous facilities with MDF.

** H Compare TN-OE list with ESS dump or translator frame wiring.

** I Compare CP-OE list with MDF wiring.

** J Compare CP-TN list with TSPs or ANI.

** K Compare CP-TN-OE list with UNCORK or complete MDF verification.

L Compare TN-FEA-US list with accounting.

PREVENTIVE MEASURES DEFINITIONS

S Dial telephone numbers before applying spare status.

** T Prewired test of assigned facilities.

U Post completion validation of maintenance changes, cable transfers, and line equipment transfers.

V Post completion validation of service orders.

** Items which affect frame.

TABLE D

THRESHOLDS FOR APPLICATION OF CORRECTIVE ACTION AND PREVENTIVE MEASURES

APPLICATION THRESHOLD		OVERALL CKT	CIRCUIT			WORKING SPARE		
			TN/OE	CP/TN	CP/OE	CP	OE	TN
100	I							
99								S
98								V
97						T	T	D
96			V	UV	UV	V	V	E
95								
94	II	V	H	J	I	B	A	
93						C		
92								
91	III	A-L*	K	K	K			
90								
89								
88								
87								
86								
85	IV	K						
84								
83								
82								
81								
80								

I Good Operations Environment
II Preventive Measures Required
III Selective Corrective Action Warranted
IV Severe Corrective Action Required

* One or more of A-L depending on which category is the chief contributor to the error rate.

TN Telephone Number
OE Office Equipment
CP Cable Pair

TABLE E

FREQUENCY OF VER RUNS

MOST RECENT OVERALL CIRCUIT ACCURACY	SAMPLING FREQUENCY
95-100	Annually
92-94	Semiannually
86-91	Quarterly
85 or less	Monthly

TABLE F

FORM DESCRIPTIONS

FORM	TITLE	SIZE (INCHES)	PAPER STOCK	MARGIN/ PUNCH	FORMS PER PACKAGE
EO-5450	Equipment Test List	8-3/8 X 10-7/8	Bond	Right/7 Hole	50
EO-5451	Preventive Maintenance Schedule	11 X 7	Bond	Standard/7 Hole	50
EO-5452	Test and Inspection Work Order & Record	8-3/8 X 10-7/8	Bond	Standard/7 Hole	50
EO-5453	Test and Inspection Summary	8-3/8 X 10-7/8	Bond	Standard/7 Hole	25
EO-5454	Test and Inspection Summary	5 X 8	Card	None	25
EO-5455	Test and Inspection Summary Multiple Job Assignments	11 X 17	Bond	Standard/7 Hole	25
EO-5457	Central Office Log	8-3/8 X 10-7/8	White	None	50
EO-5497	Frame Control Record	8-3/8 X 10-7/8	Bond	None	50
EO-6954	Frameworker Work Evaluation Sheet	8-3/8 X 10-7/8	Bond	Standard/7 Hole	50
EO-6955-A EO-6955-B	Frameworker Performance	8-3/8 X 10-7/8	Bond	Standard/7 Hole	25
EO-10260	Distributing Frame Trouble Ticket	3-1/2 X 6-1/2	White	None	50

TABLE G

FORM REQUIREMENTS

PLAN	FORM	FORM NAME	FORCE SIZE		
			0 - 1	2 - 3	4+
Frame Force Management (201-200-010)	EO-5497	Frame Control Record	CC	X	X
	EO-5848	Work Assignment List	X	X	X
	EO-6619	Daily Forecast	N	O	X
	EO-6619-1	Daily Forecast	N	O	O
	EO-6620	Loading Sheet	N	N	O*
	EO-6843	Load and Work Time Record	X	X	X
	EO-6622	Frame Activity Log	X	X	X
	EO-6623	Other Work Log	O	O	O
	EO-6624	Control Form Daily Log	O	X	X
	EO-6625	Speaker Activity Log	O†	O†	O†
	Reproduce Locally	Time Study	O	O	O
	Reproduce Locally	Time Study Summary	O	O	O
	Reproduce Locally	Pricing Chart	O	O	O
	Reproduce Locally	Forecasted Nonorder Pricing	O	O	O
Controlled Maintenance Plan (201-200-013)	EO-5450	Equipment Test List	N	X	X
	EO-5451	Preventive Maintenance Schedule	X	X	X
	EO-5452	T&I Work Order	X	X	X
	EO-5453	T&I Summary (Sheet)	X	X	X
	EO-5454	T&I Summary (Card)	O	O	O
	EO-5455	T&I Multiple Assignments	O	O	O
	EO-5457	Central Office Log	X	X	X
	EO-6954	Work Evaluation Sheet	X	X	X
	EO-10260	Trouble Ticket	O	X	X
Frameworker Performance Plan (201-200-014)	EO-6955-A	Performance-Productivity	X	X	X
	EO-6955-B	Performance-Quality	X	X	X

PLAN	FORM	FORM NAME	FORCE SIZE		
			0 - 1	2 - 3	4+
Frame Performance Measurement Plan (201-200-005)	EO-10341	Frame Unit Report	O	O	X
	EO-10342	Performance Summary	O	O	X

LEGEND:
N: Not Required
X: Required (check local BOC requirements)
CC: Maintained in Control Center
O: Optional and suggested
*: A Form EO-6620 or a Form EO-6843 should be maintained
†: Form EO-6622 should be used if EO-6625 is not used.

Note: Some forms shown as optional may have a similar form used for Central Office technicians that may include frame attendants.

TABLE H

ACRONYMS IN THIS PRACTICE

ACRONYM	MEANING
APP	Accident Prevention Plan
ARSB	Automated Repair Service Bureau
BOC	Bell Operating Company
CO	Central Office
COSMIC	Common System Main Interconnection Frame System
COSMOS	Computer System for Main Frame Operations
CP	Cable Pair
CTRAP	Customer Trouble Analysis Plan
ESS	Electronic Switching System
ETL	Equipment Test List
FCC	Frame Control Center
FCMP	Frame Controlled Maintenance Plan
FFMP	Frame Force Management Plan
FJC	Frame Jumper Count (transaction code)
FPP	Frameworker Performance Plan
HMDF	Horizontal side of Main Distributing Frame
IDF	Intermediate Distributing Frame
LDF	Line Distributing Frame
M	Memo (trouble ticket)
MDF	Main Distributing Frame
MR	Mandatory Review (test classification)
MW	Mandatory Work (test classification)
NA	Not Applicable
NG	Number Group
NTF	No Trouble Found
5XB	No. 5 Crossbar
OE	Office Equipment (also, line equipment)
REF OUT	Referred Out
RSB	Repair Service Bureau
SCC	Switching Control Center
T	Trouble (trouble ticket)
TDF	Trunk Distributing Frame
TN	Telephone Number
TOM	Tabulation of Module (jumpers)
TREAT	Trouble Report Evaluation and Analysis Tool
TRNSL	Translator Frame
TT	Trouble Test
VER	Verification of data base (COSMOS transaction)
VMDF	Vertical side of Main Distributing Frame

REFERENCE: BR 201-200-013 (REPRODUCE LOCALLY)

FRAME TRACKING

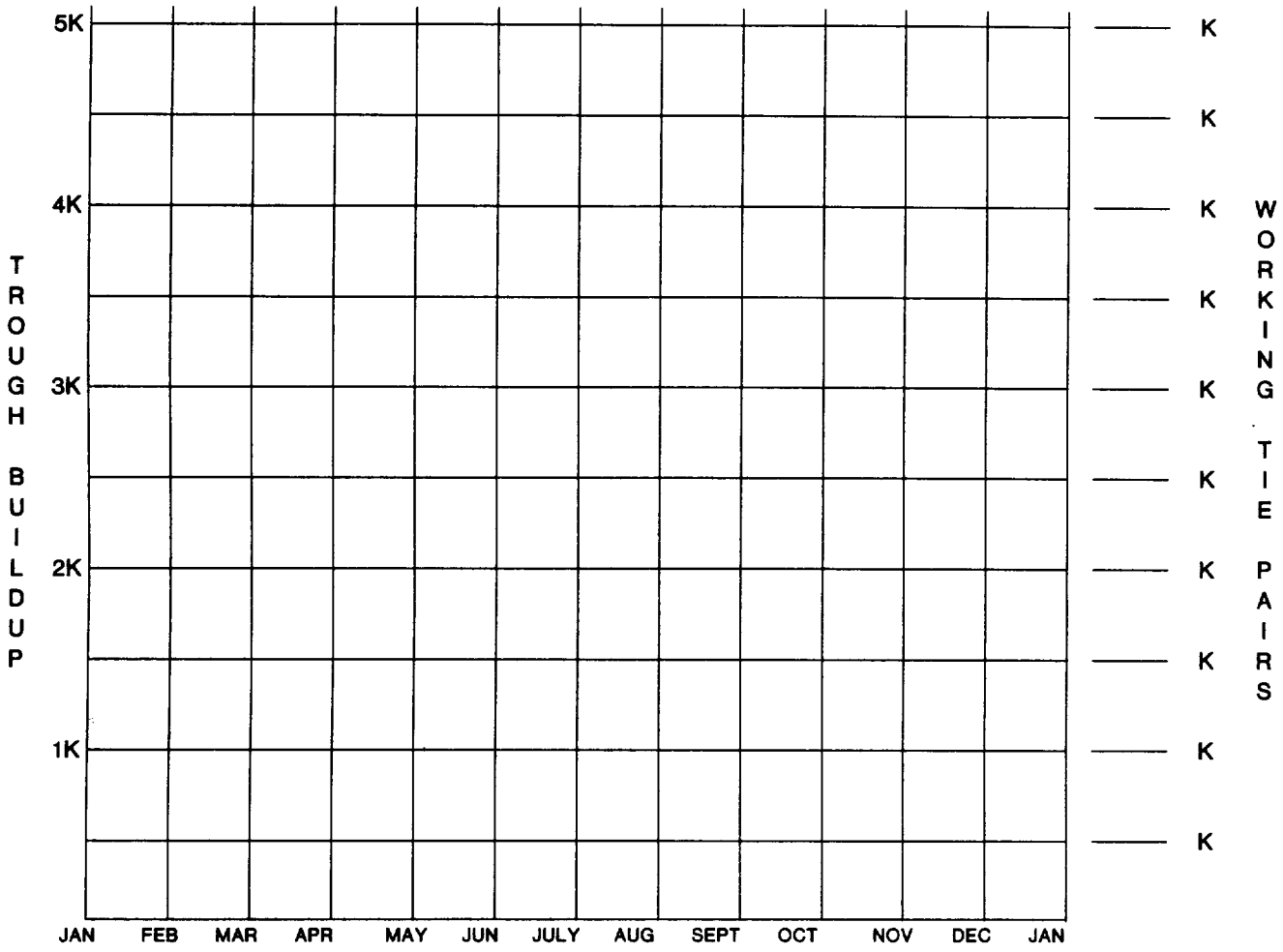
WIRE CENTER _____ FRAME _____ # MODS _____ # LINEUPS _____

JUMPER MANAGEMENT	January	February	March	April	May	June	July	August	September	October	November	December	Total
CPR PHASE NUMBER													
JPR % SHORT JUMPER													
LPO # ORDERS													
OVERDUE OVER 3													
DAYS W/O FRAME													
COMP.													
TPU % SPARE													
C1 - C2													
C1 - M1													
C1 - M2													
ESR "M" NUMBER													
DIP OPTION													
% MS FILL													
(ACTUAL)													
DIP MANAGEMENT													
UDP CLF													
RLF													
ECS													
JL													

REFERENCE: BR 201-200-013 (REPRODUCE LOCALLY)

WIRE CENTER _____ FRAME _____ TPDF TIE PAIRS _____[MAX]

YEAR _____ #MODS _____ # LINE UPS _____



"M" NUMBER ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

O JUMPER BUILDUP

—•— TIE PAIRS