CONNECTION APPRAISAL INDEX
LOCAL COMPONENT
GENERAL DESCRIPTION

1. GENERAL

1.01 This section provides a general description of the local component of the Connection Appraisal Index. The local component indicates the performance in meeting loss and noise objectives for the trunk portion of local interoffice connections.

1.02 The Index is based on observations of samples of interoffice calls selected on a random basis. Intrabuilding calls are not included in the selection of the samples.

1.03 Local connection appraisals are scheduled by selecting samples of originating entities. The observations are then made at an office which is included in the selected originating entity. Local connection appraisals, when required, are completed in conjunction with the toll connection appraisals. Summaries of the local connection appraisals become the sources of data for computation of Local Connection Appraisal Indexes. Detailed instructions for the connection appraisals are found in Section 301-210-100 and associated sections.

1.04 Index tables found in Section 301-202-300 are used in converting local connection appraisal results into indexes. Summary procedures are described in Section 301-202-500.

2. SCOPE OF THE LOCAL COMPONENT

2.01 The local component is designed to indicate the average transmission performance of the trunk portion of local interoffice connections, as tested on a random basis.

2.02 The component is based on observations of loss and noise on connections from a local office through local direct and tandem trunks and associated switches to another local office. The observations are made in a manner which excludes the effects of subscriber loops and station equipment. Other transmission characteristics are not measured.

2.03 Observations are made on a sample of 50 calls once a year in every large entity and once every two years in small entities, if local interoffice calling is provided. The combined results of the observations completed in an area in a quarter measure the performance of a good cross section of local trunk plant, and all offices are covered within two years. All good performance areas, as well as weak spots, are therefore included.

3. INDEX OBJECTIVES

(A) General

3.01 Objectives for the local component of the Connection Appraisal Index are based on transmission objectives for the trunk portion of local interoffice connections. These objectives are derived in part from knowledge of transmission objectives for individual trunks, their use in connections, and from many observations of transmission performance of connections.

3.02 The transmission characteristics of local interoffice trunk connections can vary substantially from one connection to another, because there are allowable design and maintenance deviations for each trunk. The transmission objectives for such a trunk connection must, therefore, describe the desired distribution of transmission characteristics. It is the objective of the local component plan to measure how actual distributions of observations compare with the desired distribution.

(B) Loss

3.03 The losses observed on local interoffice trunk connections should have a mean value of 4.4 dB and a standard deviation of 1.7 dB. With this distribution of observations,

about 40 percent will be less than 4.0 dB, and about 2 percent will be 8.0 dB or more.

3.04 If the observations of loss below 4.0 dB are 40 percent of the total, and the observations 8.0 dB or more are also 2 percent, the loss subcomponent will be 97. The index tables furnished in Section 301-202-300 are based on these objectives.

(C) Message Circuit Noise

3.05 Observations of message circuit noise have been made on many samples of local interoffice trunk connections. The results could not be related to noise objectives for individual trunks, because a very large number of combinations of trunks was possible for every connection. It was possible to relate noise observations to an arbitrary reference value and determine the allowable percentage of observations which would normally exceed this value. This method was therefore chosen, and index objectives were empirically derived.

3.06 When the percentage of observations exceeding the reference value is 7 percent, the noise subcomponent will be 97. The index table furnished in Section 301-202-300 is based on this objective.

4. ACCURACY OF THE COMPONENT

4.01 The local component is based on sampling techniques which are subject to sampling error. The samples taken to produce the basic data are chosen to produce valid results at the division or area level. Index calculations are subject to substantial statistical error at lower organizational levels.

4.02 The local component should not be developed below division or area level, but it is useful at area or Company level. In those areas where division organizations exist, a sufficient number of samples are usually taken to give good results also. The local component will generally have 90 percent confidence intervals of ± 1.0 or better.

5. APPLICATION

5.01 As discussed above, the local component is a useful indicator at division or area level but is not valid for smaller units. The component index indicates the general level of performance in meeting transmission objectives for the trunk portion of local interoffice connections. An index of 96 to 98 is considered satisfactory.

5.02 The trend of the local component may be more important than individual results. Continuing trends in the satisfactory range, and results in the 90 to 95 range which are trending upward, may need no further attention. Downward trends in the satisfactory range, and results below the satisfactory range which are not improving, need further analysis. It may also be desirable to investigate the very good results, since there may be good techniques useful in other areas.

5.03 When component results appear to need further attention, it is desirable to review the data summaries prepared in accordance with Section 301-202-500. The basic data in the summaries may suggest possible weak spots. Further investigations should include the analyses described in Section 301-210-506.