CENTRALIZED AUTOMATIC REPORTING ON TRUNKS—ISSUE 3 (2CA3)

SUMMARIZATION PROCEDURES

NETWORK TRUNK TRANSMISSION MEASUREMENT PLAN

1. GENERAL

1.01 This section provides the summarization procedures for transmission test results performed by Centralized Automatic Reporting On Trunks (CAROT), generic issue 3 for the Network Trunk Transmission Measurement Plan (NTTMP). Procedures are included for loss, C-message noise, balance, gain-slope, and C-notch noise test results.

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

1.03 Centers equipped with CAROT generic 3 (2CA3) are able to schedule, test, and summarize the test results of loss, C-message noise, balance, gain-slope, and C-notch noise on a routine basis. The summarized results will be printed out as a NTTMP Summary Report (Fig. 1). If some trunks cannot be accessed by 2CA3, the tests will have to be made using manual test procedures. Procedures for summarizing the manual tests are found in BR 301-140-110.

2. NTTMP INPUT DATA

2.01 To maintain uniformity throughout the NTTMP, loss and C-message noise readings are taken and processed on a measurement basis. That is, each direction of transmission is treated individually. For example, a trunk measured for C-message noise in both directions is counted as two measurements. This makes it possible to have two measurements that exceed the maintenance limit (ML) and receive two Q1s, or have the two measurements exceed the immediate action limit (IAL) and receive two Q2s, or receive one Q1 and one Q2 for a single trunk measured in both directions.

2.02 Balance, gain-slope, and C-notch noise are handled on a per-trunk basis and results recorded as tests. Tests are based on transmission characteristic measurements of the trunk with worst case single jeopardy. This means the worst condition found in either direction is the only exception charged to the trunk. An example is a trunk with a Q1 in the near-to-far (N/F) direction and a Q2 in the far-to-near (F/N) direction. The Q2 result will be recorded on the report.

2.03 Balance tests will include measurements for echo return loss (ERL), singing return loss (SRL), and singing return loss high (SRLH) and are counted as one balance test.

2.04 The ML for loss (1.0 dB and 1.5 dB) specified in AT&T Section 660-450-301 is not to be used as an indexing limit in NTTMP. Instead, a Q1 indexing limit of 1.7 dB is used. Using this limit for loss

makes the limit consistent across all testing systems. Test limits to be used for the other transmission characteristics are explained in AT&T Section 660-450-301.

2.05 The NTTMP #7 Summary Report printout (Fig. 1) is used for source data as input to the Centralized Results System (CRS). The report data are automatically generated and the data fields populated with available data by 2CA3. A mechanized interface to CRS is available which eliminates the need for manual terminal input to CRS from 2CA3. The data fields are directly related to the information that is requested by CRS for input (via a data terminal). The data fields are explained in the following paragraphs:

(1) *TRUNKS SCHEDULED (column A):* The total number of trunks scheduled during the month for loss and C-message noise is shown in the **TRUNKS SCHEDULED** column. Even if a trunk is scheduled to be tested more often than monthly, it is only counted as one trunk scheduled. The trunks scheduled during the quarter for gain-slope and balance are also entered in the **TRUNKS SCHEDULED** column. If a trunk is scheduled to be tested more often than once a quarter, it will only count as one trunk scheduled.

(2) *MEAS/TST SCHEDULED (column B):* Loss and C-message noise measurements scheduled during the month are shown in the **MEAS/TST SCHEDULED** column. Trunks measured in both directions count as two measurements. If the measurement is made in only one direction, it counts as one measurement. The number of tests scheduled during the month for balance, gain-slope, and C-notch noise are also shown in the **MEAS/TST SCHEDULED** column for these characteristics. If a trunk is to be tested four times during the month it will count as four tests. To calculate measurements scheduled for loss and C-message noise, 2CA3 must identify the type of far end test line (TYP), type of facility (FAC), frequency of testing (FREQ), and the total number of trunks (NTRKS). The various TYP, FAC, and FREQ codes used by CAROT are shown in Table A. The total number of measurements (NMEAS) scheduled is a function of TYP, FAC, FREQ, and NTRKS. Total measurements will be calculated by 2CA3 using the following algorithm:

TYP FAC FREQ NMEAS

8 5 10 NTRKS x 4.3

8 5 20 NTRKS x 2.2
8 5 30 NTRKS x 1.0
9 6 10 NTRKS x 8.6
9 6 20 NTRKS x 4.3
9 6 30 NTRKS x 2.0
9 10 10 NTRKS x 8.6
9 10 20 NTRKS x 4.3
9 10 30 NTRKS x 2.0

Note: The above algorithm does not include daily measurements. The daily measured trunks are excluded from NTTMP for loss and C-message noise. Measurements scheduled for loss and C-message noise are calculated by summing all NMEAS for loss and all NMEAS for C-message noise given by this algorithm.

(3) *TRUNKS COMPLETED (column C):* The number of trunks completed during the month for all five transmission characteristics will be shown in the **TRUNKS COMPLETED** column. If a trunk is tested more than once during the month, it only counts as one in the **TRUNKS COMPLETED** column.

(4) *MEAS/TST COMPLETED (column D):* The measurements completed during the month for loss and C-message noise are shown in the **MEAS/TST COMPLETED** column. If a trunk is measured four times in both directions, eight measurements are entered in this column. The number of balance, gain slope, and C-notch noise tests completed during the month will also be shown in the **MEAS/TST COMPLETED** column for these characteristics. If a trunk is tested four times during the month for balance, gain slope, C-notch noise, it counts as four tests completed.

(5) *Q1 MEAS/TST (column E):* The measurements completed during the month that were greater than the Q1 limit, but less than or equal to the Q2 limit for loss and C-message noise, will be shown in the **Q1 MEAS/TST** column. A note at the bottom of each report states: Q1 for loss is the number of measurements that exceed 1.7 dB, but are less than or equal to 3.7 dB. All balance, gain-slope, and C-notch noise tests completed during the month that were greater than the Q1 limit, but less than or equal to the Q2 limit, are also shown in the **Q1 MEAS/TST** column. If one of the three measurements made for balance is considered a Q2, one a Q1, and one within limits, the test is considered to be one Q2 test (worst case single jeopardy).

(6) *Q2 MEAS/TST (column F):* The measurements or tests completed during the month that were greater than the Q2 limit for loss, C-message noise, balance, gain slope, and C-notch noise are shown in the **Q2 MEAS/TST** column.

(7) Under certain conditions, the NTTMP Summary Report from 2CA3 may contain apparent inconsistencies because the report is constructed from three (3) different data sources within CAROT. The major data items affected are the number of trunks scheduled and number of trunks completed. Completed measurements and tests, Q1 and Q2 items are used in calculating the banded results, but are not impacted by these inconsistencies. See Table B for a listing of these items.

2.06   If tests were scheduled but not completed, an "NAV" should be recorded in the appropriate space on Form NTTMP2. The "NAV" means the data are not available. The data are considered as unsatisfactory and reported as a Band U on the Plant Control Office (PCO) results from the CRS. For components that are not required to be tested, enter the notation "E" to show an empty field. The "NAV" and "E" information must be entered manually on the form because CAROT does not generate "NAV" or "E" notation.

2.07   The report month interval for NTTMP is defined as the 23rd of the previous month to the 22nd of the current month. It is recommended that summaries developed on Form NTTMP2 for each PCO are to be input to CRS by the 10th working day after the end of the report month. However, this is under the control of the Bell Operating Company.

2.08   The summarized test results on Form NTTMP2 are used for input to CRS via a data terminal or teletypewriter. A mask or menu will be provided by CRS for this input.

NTTMP SUMMARY REPORT

DATE =

2CAROT3 INPUT

DISTRICT =   FORM = NTTMP2

OFFICE =

MONTH =

YEAR =

MSR START DATE =
TTMI START DATE =

	A	B	C	D	E	F
			SCHEDULED		Q1	Q2
	SCHEDULED		COMPLETED		Q1	Q2
CHARACTERISTICS	TRUNKS	MEAS/TST	TRUNKS	MEAS/TST	MEAS/TST	MEAS/TST
1 LOSS						
2 C-Message Noise						
3 BALANCE						
4 GAIN SLOPE						
5 C-NOTCH NOISE						

Notes: Loss and C-message noise are reported as measurements for
columns B, D, E, and F.

Balance, gain slope, and C-notch noise are reported as
tests for column B, D, E, and F.

For loss, Q1 is the number of measurements that exceed 1.7 dB,
but are less than or equal to 3.7 dB; Q2 is the number of
measurements that exceed 3.7 dB.

Fig. 1—Example of 2CA3 NTTMP Summary Report (2.05)

TABLE A

INDEX RESULTS SUMMARY DEfiNITIONS

DATA ITEM	DEFINITIONS

TYP	Type of far-end test line:
	  9 - ROTL to 105 or combination 100-type
	    test line
	  8 - ROTL to 102-type test line

NTRKS	Total number of trunks in category according to TYP, FAC, and FREQ
	
	Facility type:
	  6 - Combination E repeater, nongain with
	    or without hybrid to 100 or 105 test line
	  5 - Combination E repeater, nongain to 102
	    test line
	  10 - Combination other repeater and carrier
	    to 105 test line
	
	Note: 10 does not allow termination to 102 or 100 type test line

FREQ	Frequency of testing:
	  05 - Daily
	  10 - Weekly
	  20 - Biweekly
	  30 - Monthly

TABLE B

2CA3 NTTMP SUMMARY REPORT INCONSISTENCIES

Schedule Code Changes

For balance, gain slope, and C-notch noise, changing the schedule code to zero during the month will cause these trunks not to appear in column A, **TRUNKS SCHEDULED,** while results will appear in column C, **TRUNKS COMPLETED,** making column C results larger than column A. Changing the schedule code from zero to weekly, biweekly, etc, could cause the opposite result.

Administrative Alterations in Test Results

Deleting test results for a particular date could cause column A, **TRUNKS SCHEDULED,** to be reduced and, therefore, less than column C.

Equipment Combinations

CAROT does not test for loss and noise in both directions on certain 4-wire facilities that terminate to a 100- or 200-type test line. This is reflected in column A, but not column C for loss and C-message noise.

Access/Test Disposition

If, for some reason, the last test for a trunk during the month did not produce a result, it will be excluded from column C for any or all characteristics where this is the case.

Longer Test Intervals

Trunks scheduled at intervals longer than monthly are excluded from the loss and C-message noise totals, but are included in the balance, gain slope, and C-notch noise results. If this situation exists, it is possible to have more balance, gain slope, and C-Notch noise trunks and test results than loss and noise, There is no discrepancy for the schedule code "never" (0) which excludes results from the characteristics to which it has been applied.

Nonscheduled Trunks on Temporary Daily List

A trunk not scheduled to be tested for a characteristic is not tallied in column A. However, if the trunk is on the temporary daily list and was successfully tested for the particular characteristic, it would be counted in column C.