CENTRALIZED AUTOMATIC REPORTING ON TRUNKS (CAROT)
CAROT CENTER OPERATION AND ADMINISTRATION
DUTIES AND RESPONSIBILITIES OF THE
CAROT CENTER AND REMOTE OFFICES

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1. GENERAL

1.01 This section:

(a) Provides instructions for the operation of the CAROT Center and the remote offices with trunks that are reportable from the CAROT Controller.

(b) Defines the responsibilities of the CAROT Center and the remote offices in administering the instructions.

(c) Provides standard operating procedures.

1.02 The primary purpose of the instructions in this section is to provide a means for coordinating the operation of the CAROT Center with the remote offices.

1.03 The instructions in this section cover only the CAROT Center and the remote offices.

1.04 For the purpose of this section *remote office* is considered to be an office with trunks that can be accessed and reported on by the CAROT Controller. It will be equipped with a Remote Office Test Line, responder and other CAROT/ATMS equipment. Also included in the definition for the purpose of CAROT/ATMS equipment maintenance responsibilities, are terminating offices with only 105 test lines and responders.

2. CAROT TEST REPORTS

2.01 The primary tool for the CAROT Center to provide information to the remote offices with trunks that are reportable from the Controller is the CAROT test reports. These reports are of two types, those available in real time during the testing cycle and those furnished from the analysis program after testing is complete.

2.02 Real time reports of all trunks on which loss and/or noise immediate action limits are exceeded or a high and dry condition is encountered can be printed out on the Controller teletypewriter for referral to the involved offices. The request for this report is made during the preparation for routine trunk testing. (BSP 010-410-314).

2.03 When the testing cycle of the processor is complete the analysis program automatically begins the analyzation of all reports. The results furnished from the analysis program are sorted into the following categories:

(a) Office Results — Furnishes for each office the test results on individual trunks. This report contains the following information:

(1) Q2 Report — trunks exceeding loss or noise immediate action limits. (Exhibit 1)

(2) Q1 Report — trunks exceeding loss or noise maintenance limits. (Exhibit 2)

(3) Facilities Report — facilities on which Q1, Q2, Busy and H & D reports on trunks, tested in succession by facility, have exceeded specified thresholds. (Exhibit 3)

(4) Operational Report, trunks not tested results — trunks incurring operational failures during transmission test attempts. (Exhibit 4)

The following operational type failures will be listed:

- Permanent Busy (BUSY)
- High and Dry (H & D)
- Voice Announcement (VA)
- Audible Ring (AR)
- Reorder (RO)
- Delayed Reorder (DRO)
- Dial Tone (DT)

Note: A CAROT high and dry results from the absence of test tones, busy indications, voice announcement, dial tone, or a reorder condition from the far end test line.

(5) The results of synchronous, non-synchronous and 103 type operational tests conducted by the CAROT controller will be listed under the following four categories:

- Successful Operational Test (P)
- Trip Fail (T)
- Pre-trip Fail (R)
- Fail (F)

(b) Management Results — provides two types of information primarily for the use of CAROT Center management.

(1) Trunk Transmission Maintenance Index Report (Exhibit 5) — This information will be furnished for all offices which contain trunks flagged for index purposes. This report contains information necessary to complete form E-5911 Automatic Measurements using ATMS for the Trunk Transmission Maintenance Index, BSP 660-403-011.

(2) Management Summary (Exhibit 6) — consists of continuing totals on a per office basis for each of the following items:

- Total transmission tests
- Trunks exceeding turn down limits, loss and noise. (Q2 reports)
- Trunks exceeding maintenance limits, loss and noise. (Q1 reports)
- Total operational tests.
- Trunks failing operational test.
- Trunks not tested due to high and dry, busy, and trunks not tested due to other reasons. (voice announcement audible ring or reorder conditions.)

(3) Daily Management Summary — consists of the daily results for each office analyzed on the last run of the analysis program for the same categories as listed in (2) above. In addition, the total number of trunks in the test file for each office is printed next to the office name.

(4) CAROT Operational Summary — consists of a summary of all ATMS and CAROT equipment troubles encountered during routine testing, such as ATMS responders failing self check measurements. The trouble indications reported on this summary are discussed in BSP 103-251-300, Centralized Automatic Reporting On Trunks (CAROT), System Trouble Locating Procedures.

2.04 Management summary reports other than those obtained from the CAROT analysis program may be forwarded to higher management as requested. See paragraph 3.01(g), 4.02(k) below and Exhibits 8 and 9.

2.05 *Test Results Interpretation:* The test results are shown as deviations from test parameters with the range of deviation indicated by the Q Flag. The test parameters are listed as follows using the example in Exhibit 1:

Expected Measure Loss	04.2 dB
Loss maintenance limit	+1.5 dB
Noise maintenance limit	22 dBrnc
Noise immed. action limit	30 dBrnc

The loss test results are shown in two columns, F/N/L — Far to Near Loss and N/F/L — Near to Far Loss. The deviations shown add to or subtract from the EML, i.e., + 4.1 indicates a meter reading of — 8.3dB (4.2 EML plus 4.1 excess loss = 8.3), — 0.4 indicates a reading of — 3.8 dB.

The noise test results are shown in two columns N-En — Near End Noise and F-En — Far End Noise. The deviation shown is added to or subtracted from the noise maintenance limit, i.e., + 21 indicates a reading of 43 dBrnc. The symbol ?? is a measurement beyond the range of the responder either too high, + ??, or too low, — ??.

The Q flags are shown when the maintenance limit Q1, or the immediate action limit, Q2, has been exceeded. The Q flag given is on the last measurement on the trunk exceeding the limit. For example in Exhibit 2, trunk #5106 exceeds the F/N loss, N/F loss, N-E noise and F-E noise maintenance limits and a Q1N2 is shown. A Q2 will be flagged before any Q1s.

3. RESPONSIBILITIES

3.01 The CAROT Center is responsible for the overall *coordination* and *control* of *all* functions connected with the CAROT system.

The center must:

(a) Be responsible for routine testing of loss and noise and the reporting of test results on all trunks accessible from the CAROT controller. Testing parameters and frequency of test may be found in BSPs, 600-403-500, Message Circuit Noise Measurements on Message Trunks — Requirements, and 660-402-300, Transmission Maintenance, Overall 1000-Hz Loss Measurements on Message Trunks.

(b) Provide adequate trained personnel for operating the CAROT and associated tape preparation centers.

(c) Compile and maintain a list of the test lines installed in an office and the telephone numbers needed to reach the test line. (See BSP 010-410-311, Office Test Line Directory)

(d) Coordinate all technical assistance required by the remote offices during turn up or maintenance of CAROT/ATMS equipment.

(e) Maintain a complete up to date trunk maintenance file for each CAROT reportable office. (See BSP 010-410-312 — CAROT Trunk Maintenance File.)

(f) Compile a routine trunk testing schedule to include a schedule for Trunk Transmission Maintenance Indexing purposes. (See Appendix 1 — CAROT — Scheduling Trunks For Routine Testing.)

(g) Forward copies of the Management Summary report to the necessary higher management personnel. The CAROT Center supervisor will be responsible for compiling a list of interested higher management personnel.

3.02 The remote offices have the responsibility for repairing and aligning all trunks reported either verbally or by TTY from the CAROT Center. The remote offices shall:

(a) Respond to CAROT Center directions on all referred reports.

(b) Respond to CAROT Center directions when maintaining allied CAROT/ATMS equipment.

(c) Furnish input documents when the CAROT Center requests them in order to establish and update the trunk maintenance file.

4. PROCEDURES

4.01 The CAROT controller processor may be programmed to start a testing cycle at any future time and will automatically perform the following operations:

Time of Day	Operation
Start of testing cycle	Begins to automatically perform routine loss and noise tests per pre-loaded instructions.
During testing cycle	Prints out all Q2 reports and high and dry failures if requested.
End of testing cycle	Automatically begins analyzation of reports.
Results	All results are punched on paper tape for transmission via TTY to the

offices in the formats of Q2 and Q1 reports, facilities report, operational — trunks not tested and operational test failures.

4.02 The CAROT Center shall:

(a) Transmit all Q2 and high and dry reports to the involved remote office as soon as possible after being identified, so that trunks may be removed from service and repaired prior to the busy hour.

(b) Maintain a log of *all* Q2 and high and dry troubles referred to the remote offices (See Exhibit 7).

(c) Consider all logged referred CAROT reports as uncleared trouble until reported cleared by the respective remote offices.

(d) Transmit all CAROT reports to the remote offices as soon as possible after the controller analysis is complete.

(e) Carefully analyze the reports referred log, the operational troubles, trunks not tested report, and the CAROT operational summary. This analysis will reveal the efficiency and response of each office toward the repair effort, will help in identifying intermittent troubles, and will point out data base and related CAROT equipment problems.

(f) Correct, as soon as identified, data base problems. Accuracy of the CAROT — TMF data base is of paramount importance to the successful testing and referral process and *must* be maintained at a 100% accuracy point.

(g) Maintain a record of all CAROT/ATMS equipment problems including status and group responsible for repair. Controls must be established to ensure prompt repair and routine inspections of all CAROT related equipment. This will encompass the CAROT controller as well as *all* remote office equipment such as ROTL, responder and 105 testline.

(h) Assist the remote offices in resolving any operational troubles. The CAROT Center is responsible for the close analysis of VA, RO, DRO, AR and DT reports. This type of report is to be analyzed at the CAROT Center to insure that the report is not a data base problem. After complete analysis by the CAROT Center, the report may be referred to the remote office if investigation is required by that office.

(i) Request each remote office to investigate the trunks reported permanently busy on the operational report. The results of this investigation should be reported back to the CAROT Center and logged for further analysis.

(j) Respond to requests for demand test on trunk groups for trouble investigation when requested by the remote offices.

(k) Initiate a CAROT and remote office performance report on a weekly basis to concerned district and division level management. The district report should include all reportable offices within the district and should display such items as:

1. number of trunks scheduled for test
2. actual number of tests reported on by CAROT (including operational)
3. number of Q1 reports
4. number of BUSY reports
5. number and type of immediate action referrals (Q2 and High and Dry)
6. the disposition of the immediate action referrals including busy hour outage incurred
7. the status of all CAROT/ATMS equipment out of service
8. other categories as requested

The division report should include all reportable offices within the division and should display such items as:

1. number of immediate action referrals
2. number not repaired within 24 hours and status
3. number of CAROT/ATMS equipment outages

Examples of formats for district and division reports are shown in Exhibits 8 and 9.

4.03 The CAROT Center may be utilized to conduct final transmission acceptance tests on circuit orders. Where this is part of the CAROT Center operation, loss and noise test shall be conducted and deviation parameters adhered to as spelled out in sections 660-450-300 and

660-450-301. This acceptance test may also be completed via an interrogator ROTL control unit. In no case will the CAROT Center be responsible for resolving discrepancies on circuit orders.

4.04 Remote offices have the responsibility for repairing and aligning all trunks reported either verbally or by TTY message by the CAROT Center. The remote offices shall:

(a) immediately identify and remove from service all reported Q2 and high and dry reports received from the CAROT Center.

(b) enter *all* CAROT reported trunks removed from service on Form 1025, outage ticket or Form E-4255, log of trunk outages. (BSP 660-400-010).

(c) follow instructions spelled out in the respective Controlled Maintenance Plans as related to trouble ticket disposition for CAROT reported troubles.

(d) expedite repair and alignment of reported Q2 and high and dry reports. Trunks removed from service should be repaired and returned to network service prior to the earliest busy calling hour of the day.

(e) inform the CAROT Center of the disposition of all Q2 and high and dry reports as soon as possible. A full explanation of trouble found, action taken for repair and time restored to service along with the reason for any reports being carried over and not closed out will be required.

(f) inform the CAROT Center of any known problems with CAROT related ATMS equipment.

(g) expedite the repair and perform scheduled routines on all related CAROT equipment.

(h) establish procedures for the analysis of the Q1 and operational troubles, trunks not tested report in accordance with the following:

(1) Each remote office should investigate each permanent busy (BUSY) report from the trunks not tested report. Results of this investigation should be called to the CAROT Center for further analysis.

(2) Fully analyze the Q1 report received from the CAROT Center and structure plans to bring all trunks within their required EML and noise objectives.

(i) Report any trunks that cannot be aligned to their stated specification to the Design Engineer through normal channels.

TRUNKS EXCEEDING IMMEDIATE ACTION LIMITS

RCMDCA1123J	10/17/72	TTY. # 9497000
Office	Date	Office TTY No.

TRUNKS EXCEEDING Q2 LIMITS

Pulsing	Term. Office	Trk. Type	Modifier	Computer Access Code	Control Office
M–	BKLYCA01548	DF55IE			

Facility	Test Parameters
101T1BKLYCA01548	04.2 1.5 2 2 30

ROTL Priming	Trk No.	Chan. No.	Init Disp	Final Disp	Time	Test Results +4.1 F/N/L	−0.4 N/F/L	−?? N-E_n	−?? F-E_n	Q Flag
13015	1133	01	Busy	Ans	09:07					Q2L1
M – OKLDCA0346C		HU55IE								
101T1OKLDCA0346C 04.2 1.5 22 30–										
12117	1051	02		Ans	10:03	–0.3	+0.4	+21	–??	Q2NI
M – **BKLYCA164CD**		DF55IE								
101T1BKLYCA0164C 04.2 1.5 22 30										
13114	1097	01		Ans	10:45	+0.2	+4.6	–??	–??	Q2L2
12016	1098	02		Ans	10:46	–0.1	+0.5	–??	+12	Q2N2
12109	1099	03		Ans	10:47	–0.1	+0.5	–??	+13	Q2N2
M – ALBYCA1152E		HU55IE								
101T1ALBYCA1152E 04.2 1.5 22 30										
13026	1013	02		Ans	09:30	+4.2	–0.4	–??	–??	Q2L1
13022	1014	03		Ans	09:31	+4.3	–0.4	–??	–??	Q2L1
11126	1015	04		Ans	09:32	+4.4	–0.4	–??	–??	Q2L1
12011	1016	05		Ans	09:33	+4.5	+4.5	–??	–??	Q2L2
11211	1017	06		Ans	09:33	+4.6	+4.6	–??	–??	Q2L2
M – ALBYCA1152E		HU55IE								
101T1ALBYCA1152E 04.2 1.5 22 30										
12171	1147	03		Ans	08:20	+4.5	–0.4	–??	–??	Q2L1
13412	1148	04		Ans	08:19	+0.3	+0.4	+23	–??	Q2N1

Trunks Tested = 347

Q. Flag Table
Q2L1 – Failed Q2 on Far to Near Loss
Q2L2 – Failed Q2 on Near to Far Loss
Q2N1 – Failed Q2 on Near End Noise
Q2N2 – Failed Q2 on Far End Noise

EXHIBIT 1

TRUNKS EXCEEDING MAINTENANCE LIMITS

MLVYCA0138E	03/31/72	TTY#3830099
Office	Date	Office TTY Number

TRUNKS EXCEEDING Q1 LIMITS

M –	OKLDCA0100T	HU55IE			
Pulsing	Term Office	Trunk Type	Modifier	Computer Access Code	Control Office

253N1OKLDCA01	03.2	1.5	23	30
Facility	Test Parameters			

						Test Results					
K01236034410509F	5010	8	Busy	Ans.	01:22	-0.2	-0.6	+04	+00	Q1N1
ROTL Priming	Trk. No	Chan. No.	Init. Disp.	Final Disp.	Time	F/N/L	N/F/L	N-E_n	F-E_n	Q Flag
K01036034441050S	5104	8	Ans		01:23	-0.2	-0.6	+03	-01	Q1N1
K01256034441050S	5105	9	Ans		01:23	+1.1	-0.8	+05	+01	Q1N2
K01366034441050S	5106	10	Ans		01.23	+1.7	-2.0	+02	+01	Q1N2
K01376034441050S	5108	12	Ans		01:24	+1.7	-2.0	+02	+01	Q1N2
K01386034441050S	5110	6	Ans		01:24	+1.7	-2.0	+02	+01	Q1N2

M –	OKLDCA0100T	HU55IE		
251N1OKLDCA01	03.1	1.5	23	30

252N1OKLDCA01	03.2	1.5	23	30

K01286034441050S	5111	5	Ans		01:25	+0.1	+0.0	+05	-01	Q1N1

Trunks Tested = 347

EXHIBIT 2

MLVYCA0138E (Office) 03/31/72 (Date) TTY # 3830099 (Ofc. TTY No.)

FACILITY ANALYSIS

M – (Pulsing) OKLDCA0100T (Term Office) AF50MT (Trunk Type) (Modifier) (Computer Access Code) (Control Office)

253N1OKLDCA01 (Facility) 03.2 1.5 23 30 (Test Parameters)

ROTL Priming	Trk No.	Chan	Init Disp	Final Disp	Time	Test Results	Q Flag
K0123603441050S	5101	8	Ans		01:22	-0.6 -0.7 +04 +01	Q1N2
K012460344410505	5104	8	Ans		01:23	-0.2 -0.6 +03 -01	Q1N1

M – OKLDCA0100T AF50MT
251N1OKLDCA01 03.2 1.5 23 30

K010360344410505	5104	8	Ans		01:23	-0.2 -0.6 +03 -01	Q1N1
K012560344410505	5105	9	Ans		01:23	+1.1 -0.8 +05 +01	Q1N2
K013660344410505	5106	10	Ans		01:23	+1.7 -2.0 +02 +01	Q1N2
K012660344410505	5107	11	Ans		01:23	-1.1 -0.1 -04 +00	
K013760344410505	5108	12	Ans		01:24	+1.7 -2.0 +02 +01	Q1N2
K012760344410505	5109	5	Ans		01:24	-1.2 -0.1 -02 -01	
K013860344410505	5110	6	Ans		01:24	+1.7 -2.0 +02 +04	Q1N2

Trunks Tested = 347

EXHIBIT 3

OPERATIONAL REPORT

RCMDCA1123J (Office) | 12/24/70 (Date) | TTY # 9497000 (Ofc. TTY. No.)

TRUNKS NOT TESTED

M- (Pulsing) | BKLYCA01548 (Term. Ofc.) | DF55IE (Trk. Type) | (Computer Access Code) | (Control Office)

Facility: 101T1BKLYCA01548 | 04.2 -1.5 22 30 (Test Parameters)

K01386034441050S	1005	06	H&D	H&D	09:22
ROTL Priming	Trk. No.	Chan	Init Disp.	Final Disp.	Time of Last Test

M- ELSBCA1122C DF55IE

101T1ELSBCA1122C 04.2 1.5 22 30

K013660344410505	1024	01	Busy	Busy	09:38

M- ALBYCA1152E HU55IE

101T1ALBYCA1152E 04.2 1.5 22 30

K013860344410505	1062	01	RO	RO	10:13
K012660344410505	1068	07	Busy	Busy	10:19

M- ALBYCA1152F DF55II

101T1ALBYCA1522F 04.2 1.5 22 30

K012760344410505	1078	06	H&D	H&D	10:27
K012560344410505	1088	04	Busy	Busy	10:36
K013760344410505	1094	10	Busy	Busy	10:42

M- BKLYCA164CD DF55IE

101T1BKLYCA0164C 04.2 1.5 22 30

K012460344410505	1107	11	DT	DT	10:54

EXHIBIT 4

TRUNK TRANSMISSION MAINTENENCE INDEX

INFORMATION FROM 06/23/72 TO 07/22/72

Office Name

Fac. Facility Type	T.L. Test Line	>.7	>1.7	>3.7	L Meas Number of Loss Meas.	Q1N Number of Q1 Noise	Q2N Number of Q2 Noise	N Meas Number of Noise Meas.
		Deviations						
MLVYCA0138E								
09	105	62	11	2	264	18	0	264
08	105	0	0	0	0	0	0	0
01	105	77	9	2	380	15	0	379
01	102	30	1	0	39	0	0	0
03	105	0	0	0	0	0	0	0
03	102	0	0	0	0	0	0	0

FACILITY TYPE

09 – Carrier

08 – V type repeater

01 – E type repeater

03 – Non-gain

See Section 660-403-011 Automatic Measurement Using ATMS for the Trunk Transmission Maintenance Index

EXHIBIT 5

CAROT MANAGEMENT SUMMARY

06/01/72 TO 06/08/72

Office Name / Total Trans Test	Maintenance Limit Loss	Maintenance Limit Noise	Immediate Action Limits Loss	Immediate Action Limits Noise
Total Oper Test	Operational Failures	Busy's	High & Dry	Others Not
SNFCCA0198C (xxxx)*				
2168	204	130	23	10
0	0	178	16	28
SSLTCA11332				
825	52	19	10	0
0	0	22	28	61
MLVYCA0138E				
1841	102	93	4	1
0	0	40	0	15
BKLYCA0184E				
1341	20	37	0	6
0	0	109	44	80
SNFCCA1746C				
1877	44	60	10	17
0	0	142	167	68
MORGCA1237A				
907	11	0	0	0
0	0	0	0	0
SNLNCA1127C				
1899	121	49	4	5
0	0	170	36	134

* Daily Summary only – Number of Trunks Prepared for Testing

EXHIBIT 6

Exhibit 7

TROUBLE LOG

OFFICE BRKLYCA01548

Page 1

TICKET #	REFERRED TO DATE-TIME	TRK#	TERMINATING OFFICE NAME	TRBL	TURN UP DATE-TIME	TROUBLE LOCATION ORIG	TERM	FAC	CAROT	HRS OUT	REMARKS
1	Pete 10/17 0800	1051	OKLD 03	Q2N1	10/17 0930			✓		1.5	T RPTR
2	↓	2			↓			✓		↓	↓
3		3						✓			
4	↓	4			↓			✓		↓	↓
5	al 10/17 0830	1078	ALBY 11	HD	10/17 0900		✓			.5	Frame
8	Pete 10/20 0800	1024	ELSB 11	Q2N1	10/20 1100			✓		3.0	NCXR

CAROT & Remote Office Performance Report

District Report

District _____ Office _____ Week _____

# of trunks-scheduled Daily _____ Weekly _____ Biweekly _____ Monthly _____

# of trunks-total _____ Operational Tests _____ Operational Failures _____

Immediate Action
Referrals

Disposition

Terminating Office	Trunk #	Trouble	Outage Hours	Originating Office	Terminating Office	Facility Type	CAROT Center	Remarks

Other Reports

Q1 L _____ total Q1 N _____ total BUSY _____ total

CAROT/ATMS Equipment out-of-Service

Equipment	Date-Time	Outage Hours	Referred to	Status

Exhibit 8

CAROT & Remote Office Performance Report

Division Report

DIVISION _____ Week _____

District _____

Office	Immediate Action Referrals-Total	Out over 24 Hours	CAROT/ATMS Equipment Outage over 24 Hours

District _____
Office

District _____
Office

TROUBLE LOG

OFFICE____________

Page____________

TICKET #	REFERRED TO DATE-TIME	TERMINATING OFFICE TRK#	TERMINATING OFFICE OFFICE NAME	TRBL	TURN UP DATE-TIME	TROUBLE LOCATION ORIG TERM FAC CAROT	HRS OUT	REMARKS