

**E2 STATUS REPORTING AND CONTROL SYSTEM
INITIAL TROUBLE DIAGNOSES**

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1. GENERAL

1.01 This section contains procedures for sectionalizing problems to an E2 central, an E2 remote, or the E-telemetry data network. This section also provides trouble isolation and sectionalization of E2 systems which incorporate the remote call-up (RCU) feature.

1.02 This section is reissued to incorporate the RCU turnaround test and to revise Flowchart 1 to reflect this test. Since this is a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 Begin at the start block on Flowchart (FC) 1 and perform or verify each operation as directed. When a block indicating a trouble in a particular E2 bay is reached, perform all tests for that bay set forth by the appropriate Bell System Practice (BSP). Once the trouble has been found and corrected, continue with FC-1 until all remotes have been checked completely. If a block indicates a TSA or TSC problem, the appropriate test BSP for that bay should be performed.

2. REFERENCES

2.01 The following BSPs contain the troubleshooting procedures and maintenance for the E2 telemetry system.

SECTION	TITLE
201-644-503	Troubleshooting Procedures—Manual Alarm Central
201-644-504	Troubleshooting Procedures—Alarm Reporting Remote
201-644-511	Troubleshooting Procedures—Status Reporting Remote
201-644-513	Troubleshooting Procedures—Status Reporting Central

CHART 1

E2 CHECK PROGRAM FOR RCU

APPARATUS:

None

NOTICE

Not for use or disclosure outside the Bell System except under written agreement

CHART 1 (Cont)

STEP	PROCEDURE
	Instruct the TSC operator to perform the following:
1	Load diagnostic programs.
2	Load program 21.
3	Request two tries.
4	Indicate "0" (zero) milliseconds delay.
5	Indicate no quick reply.
6	Select option 2 for no answer.
7	At the E2 central location, place the switch on CP 245 in the up position.
	Requirement: The E2 central status display flip indicators shall display the pattern shown in Fig. 1, indicating that data was transmitted from the TSC to the TSA. A second group of two words will then be received, as shown in Fig. 2, indicating that data was transmitted from the TSA to the TSC. This entire sequence will occur twice.

CHART 2

RCU TURNAROUND TEST

APPARATUS:

None

STEP	PROCEDURE
1	At the E2 central, place the switch on CP 245 in the up position.
2	On the RCU central panel, <ul style="list-style-type: none"> • Set the station address selector switch to the address of the E2 remote bay to be tested. • Set the IR-TR switch to the IR position.

CHART 2 (Cont)

STEP	PROCEDURE
	<ul style="list-style-type: none">• Set the TEST A—TEST B switch to TEST B.
3	Depress the STATUS DISPL CLR switch.
4	On the RCU central panel, depress and release the START TEST switch. Requirement: The status display flip indicators shall display the pattern shown in Fig. 3. If the test does not work with any station, a central problem exists. See Section 201-644-503. If erroneous data is received, a remote problem exists. See Section 201-644-504.
5	Depress and release the STATUS DISPL CLR switch.
6	On the RCU central panel, set the IR-TR switch to TR.
7	Depress and release the RCU central panel START TEST switch. Requirement: The status display flip indicators shall display the pattern shown in Fig. 4. If erroneous data is received, or if an IR pattern is received, a remote problem exists. See Section 201-644-504.
•8	On the status display and control panel, depress and release the STATUS DISPL CLR switch.
9	On the RCU central panel, set the TEST A—TEST B switch to the TEST B.
10	Depress and release the RCU central panel START TEST switch. Requirement: The status display flip indicators shall display the pattern shown in Fig. 5. If erroneous data is received, or if an IR pattern is received, a remote problem exists. See Section 201-644-504.
	Note: If the IR, TR TEST (A), and TR TEST (B) tests all result in correct displays as shown in Fig. 3 through 5, both the central and remote are working properly.

SECTION 201-644-501

1 0	2 0	3 AA	4 AA	5 AA	6 AA	7 0	8 0
17 0	18 0	19 0	20 0	21 0	22 0	23 0	24 0
33 X	34 X	35 X	36 X	37 X	38 X	39 X	40 X
49 X	50 X	51 X	52 X	53 X	54 X	55 X	56 X
9 0	10 0	11 1	12 1	13 1	14 0	15 0	16 0
25 0	26 0	27 0	28 0	29 1	30 0	31 0	32 0
41 X	42 X	43 X	44 X	45 X	46 X	47 X	48 X
57 X	58 X	59 X	60 X	61 X	62 X	63 X	64 X

LEGEND:

- 0 — Black Indicator
- 1 — Yellow Indicator
- X — Black or Yellow Indicator
- AA — TSA Address; see Table A

Fig. 1—TSC to TSA Transmission

TABLE A
STATION ADDRESS INDICATORS

STATION ADDRESS	FLIP INDICATOR NUMBER			
	3	4	5	6
111	0	0	0	0
112	1	0	0	0
113	0	1	0	0
114	1	1	0	0
115	0	0	1	0
116	1	0	1	0
117	0	1	1	0
118	1	1	1	0
121	0	0	0	1
122	1	0	0	1
123	0	1	0	1
124	1	1	0	1
125	0	0	1	1
126	1	0	1	1
127	0	1	1	1
128	1	1	1	1

SECTION 201-644-501

1 0	2 1	3 AC	4 AC	5 AC	6 AC	7 0	8 0
17 0	18 0	19 0	20 0	21 0	22 0	23 0	24 0
33 X	34 X	35 X	36 X	37 X	38 X	39 X	40 X
49 X	50 X	51 X	52 X	53 X	54 X	55 X	56 X
9 0	10 0	11 0	12 0	13 1	14 1	15 1	16 1
25 0	26 0	27 DI	28 TE	29 1	30 X	31 X	32 X
41 X	42 X	43 X	44 X	45 X	46 X	47 X	48 X
57 X	58 X	59 X	60 X	61 X	62 X	63 X	64 X

LEGEND:

- 0 — Black Indicator
- 1 — Yellow Indicator
- X — Black or Yellow Indicator
- AC — TSC Address; see Table A
- If DI is yellow — data was ignored by TSA
- If TE is yellow — transmission error
- If DI and TE are black — data was received with no error

Fig. 2—TSA to TSC Transmission

1 0	2 1	3 0	4 0	5 0	6 0	7 0	8 1
17 0	18 0	19 A	20 A	21 A	22 A	23 0	24 0
33 0	34 0	35 0	36 0	37 0	38 0	39 0	40 0
49 0	50 0	51 0	52 0	53 0	54 0	55 0	56 0
9 0	10 0	11 0	12 0	13 1	14 1	15 1	16 1
25 0	26 0	27 DI	28 TE	29 1	30 X	31 X	32 X
41 0	42 0	43 0	44 0	45 0	46 0	47 0	48 0
57 0	58 0	59 0	60 0	61 0	62 0	63 0	64 0

LEGEND:

0 — Black Indicator

1 — Yellow Indicator

X — Black or Yellow Indicator

A — E2 Remote Address at TSA; see Table A

If DI is yellow — data was ignored by TSA

If TE is yellow — transmission error

If DI and TE are black — data was received with no error

For TSA and TSC addresses, see Table A

Fig. 3—Immediate Reply (IR) Test

1	0	2	0	3	0	4	0	5	0	6	0	7	0	8	1
17	1	18	0	19	1	20	0	21	1	22	0	23	1	24	0
33	0	34	0	35	0	36	0	37	0	38	0	39	0	40	0
49	0	50	0	51	0	52	0	53	0	54	0	55	0	56	0
9	0	10	0	11	0	12	0	13	1	14	0	15	0	16	0
25	1	26	0	27	1	28	0	29	1	30	0	31	1	32	0
41	0	42	0	43	0	44	0	45	0	46	0	47	0	48	0
57	0	58	0	59	0	60	0	61	0	62	0	63	0	64	0

LEGEND:

- 0 — Black Indicator
- 1 — Yellow Indicator

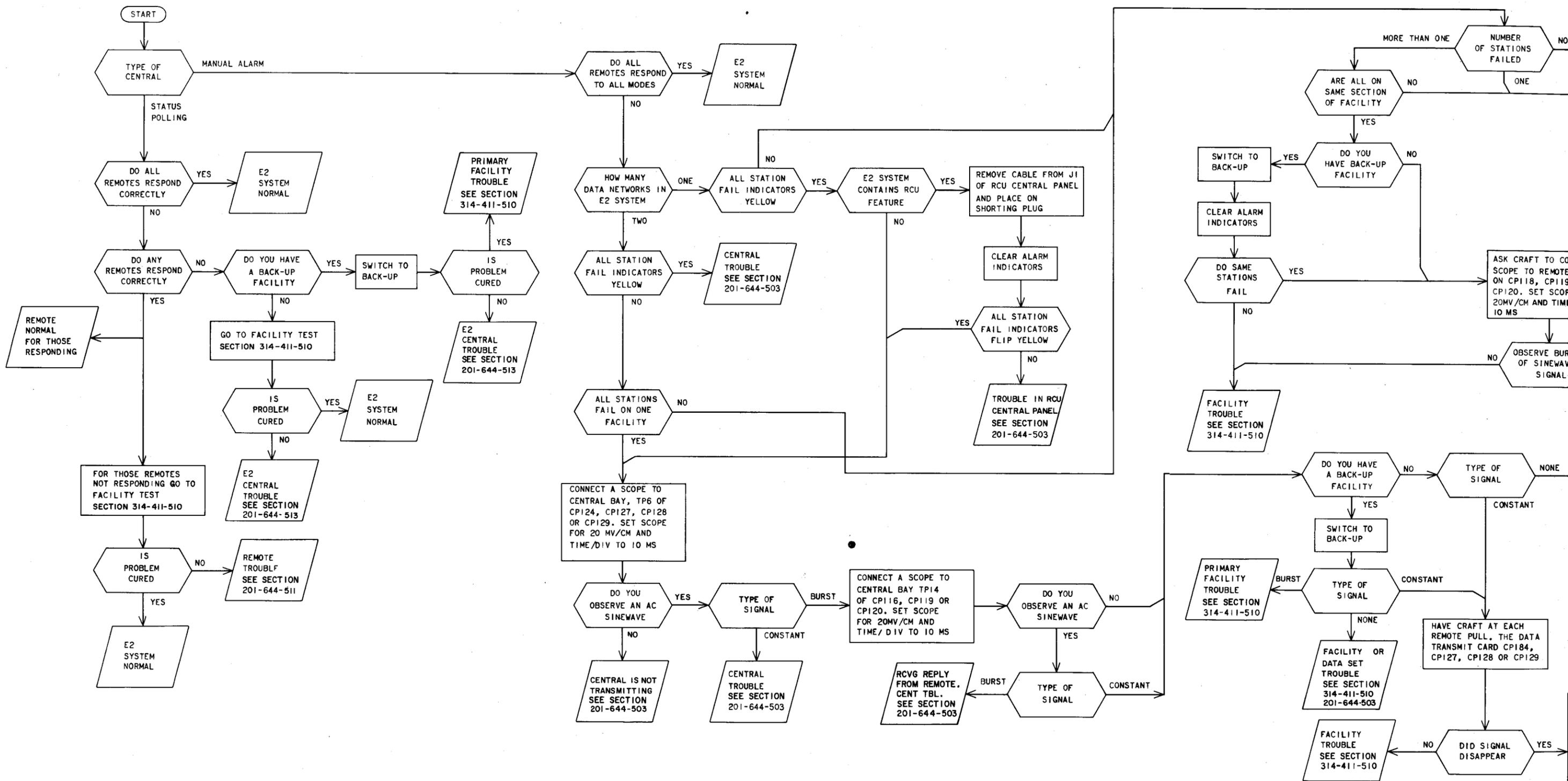
Fig. 4—Turnaround (TR) Test A

1	0	2	0	3	0	4	0	5	0	6	0	7	0	8	1
17	0	18	1	19	0	20	1	21	0	22	1	23	0	24	1
33	0	34	0	35	0	36	0	37	0	38	0	39	0	40	0
49	0	50	0	51	0	52	0	53	0	54	0	55	0	56	0
9	0	10	0	11	0	12	0	13	1	14	0	15	0	16	0
25	0	26	1	27	0	28	1	29	0	30	1	31	0	32	1
41	0	42	0	43	0	44	0	45	0	46	0	47	0	48	0
57	0	58	0	59	0	60	0	61	0	62	0	63	0	64	0

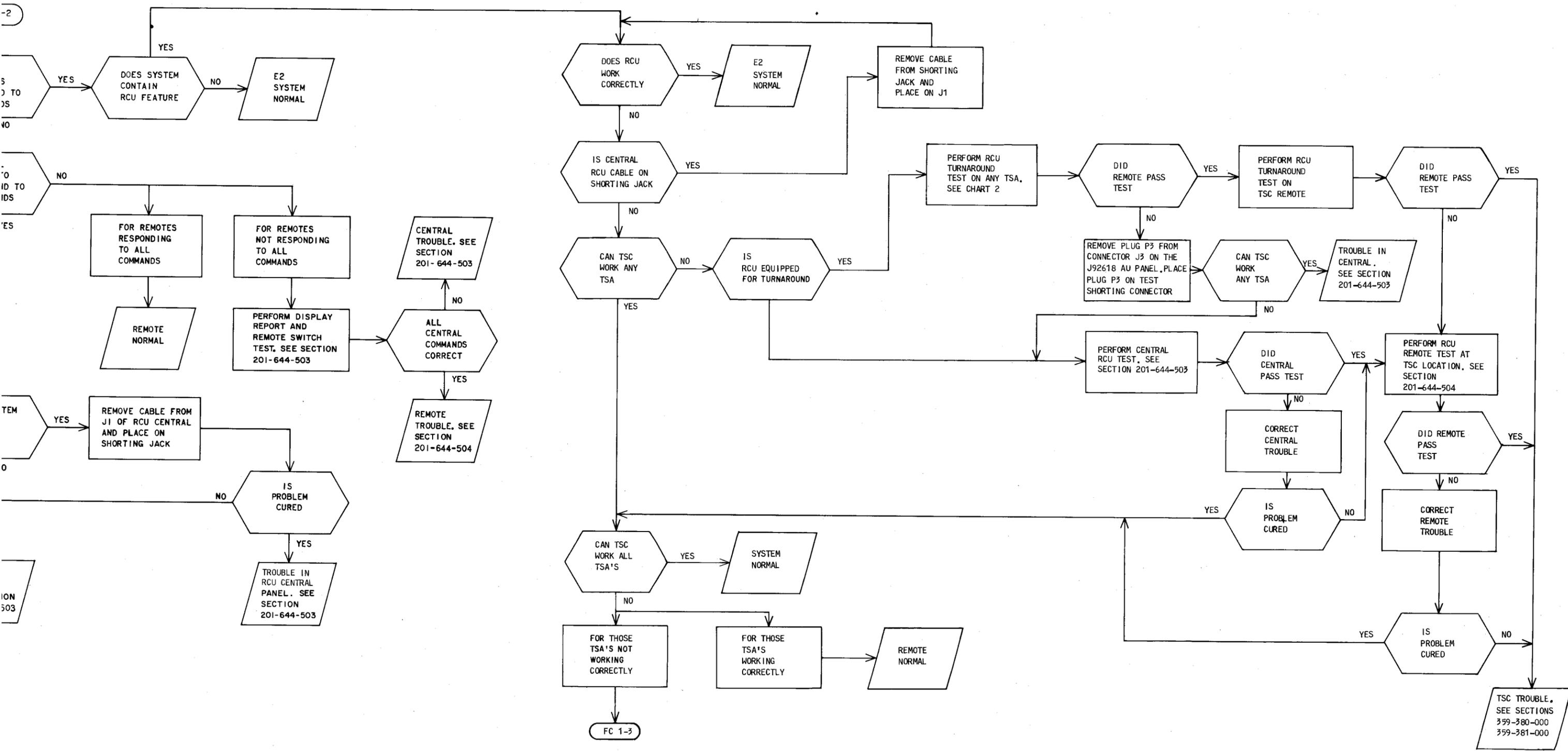
LEGEND:

0 — Black Indicator
1 — Yellow Indicator

Fig. 5—Turnaround (TR) Test B



Flowchart



Flowchart 1-2—Initial System Trouble Diagnosis (Page 2 of 3)

