

KS-16534 RECORDER-REPRODUCER AND ASSOCIATED AUDIO FACILITIES

ALARM AND AUTOMATIC TRANSFER TESTS

1. GENERAL

1.01 This section describes a method of testing the alarm and automatic transfer circuits of the KS-16534 recorder-reproducer and associated audio facilities in both single-channel, SD-95254-01, and dual-channel, SD-95255-01, arrangements.

1.02 The tests covered are:

A. *Voice Alarm — Single Channel:* This test checks the operation of the voice-operated alarm circuits in a single-channel installation.

B. *Repeat Dictate — Single Channel:* This test checks the operation of the alarm circuits involved in establishing a repeat dictate condition in a single-channel installation.

C. *Voice Alarm — Dual Channel:* This test checks the voice alarm and automatic transfer circuits of a dual-channel installation during periods of voice failure on one channel only.

D. *Major Alarm — Dual Channel:* This test checks the alarm circuits which operate during periods of failure of both channels of a dual-channel installation.

1.03 It is anticipated that the tests will be performed with Test B following Test A for single-channel installations, and Test D following Test C for dual-channel installations.

1.04 All tests require taking the announcement equipment out of service.

1.05 Before the announcement equipment is taken out of service to make these tests, and after the equipment is placed back into service upon completion of tests, local instructions pertaining to the connecting alarm circuits should be followed.

1.06 Keys, lamps, jacks, and switches referred to are in the coupling unit (KS-16535 or KS-16586) and the distribution unit (KS-16587). Relays are in the coupling unit and recorder-reproducer control unit.

1.07 In general, only lamps, relays, etc, necessary for verification are mentioned in the VERIFICATION column.

1.08 The position designations for twist keys and the functional designation for lever keys are those under the associated lamp.

1.09 *Lettered Steps:* A letter a, b, c, etc, added to a step number in Parts 3 and 4 of this section, indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

2. APPARATUS

2.01 Head telephone set.

2.02 Blocking and insulating tools as required. Use tools and apply as covered in Section 069-020-801.

3. PREPARATION

STEP	ACTION	VERIFICATION
Tests A, B, C, and D		
1	Remove mechanism front cover(s).	
2	Plug head telephone set into OPERATORS HEADSET jacks.	
Tests A and B		
3	Operate OUT OF SERVICE key. <i>Note:</i> Operation of OUT OF SERVICE key grounds lead OOS to connecting alarm circuit.	LIVE DICTATE lamp extinguished. OUT OF SERVICE lamp lights.
4	Operate LOCAL CONTROL key.	LOCAL CONTROL lamp lights.
Test B		
5	At remote control position — Disregard any lamp indications on operator control unit.	
6	Remove recorder-reproducer control unit cover.	
7a	If announcement previously recorded on drum is to be preserved — Insulate contacts 9B of G relay, 3 of E relay, 6 of F relay.	
Tests C and D		
8	Operate MINOR ALARM and MAJOR ALARM keys to CUT OFF position.	MINOR ALARM CUT OFF lamp lights. MAJOR ALARM CUT OFF lamp lights.
9b	If emergency announcement facilities are provided — Check announcement to determine that it is suitable for "on line" use.	Announcement is suitable. See Step 10c.
10c	If announcement is not suitable — Operate OUT OF SERVICE key.	
11	Operate REMOTE CONTROL CIRCUITS and CENTRAL OFFICE CIRCUITS switches to SPARE position. <i>Note 1:</i> Emergency announcement facilities provided — Operation of CENTRAL OFFICE CIRCUITS switch to SPARE position grounds lead OOS to connecting alarm circuit only if OUT OF SERVICE key was operated previously (Step 10c). <i>Note 2:</i> Emergency announcement facilities not provided — Operation of CENTRAL OFFICE CIRCUITS switch to SPARE position grounds lead OOS to the connecting alarm circuit.	REMOTE CONTROL CIRCUITS SPARE lamp lights. CENTRAL OFFICE CIRCUITS SPARE lamp lights.

STEP	ACTION	VERIFICATION
12	Operate key to LOCAL CONTROL position.	LOCAL CONTROL lamp lights.
13d	If CHANNEL ON LINE 2 lamp is lighted — Operate TRANSFER key to BARGE-IN position momentarily.	CHANNEL ON LINE 1 lamp lights. CHANNEL ON LINE 2 lamp extinguished.
14	Operate LOCAL CONTROL key to CHANNEL 2 position.	CHANNEL 2 lamp lights.

4. METHOD

STEP	ACTION	VERIFICATION
A. Voice Alarm — Single Channel		
5	Operate ANNOUNCE key.	ANNOUNCE lamp lights. Drum rotates. Speech heard in head telephone set. Volume-indicating meter needle deflects occasionally (once or twice a second) to the region between -5 and 0.
6	Lift head from surface of recording band.	Volume-indicating meter needle stops deflecting. No speech heard in head telephone set. Within 3 drum revolutions — ANNOUNCE lamp extinguished. ALARM lamp lights. Within one revolution after ALARM lamp lights — Drum stops.
7	Restore head to surface of recording band.	
8	Operate ALARM DISABLE key.	ALARM lamp extinguished. ALARM DISABLE lamp lights. Drum rotates.
9	Operate ALARM key.	ALARM DISABLE lamp extinguished.
10	Release ANNOUNCE key.	Drum stops.
11a	If Test B is not to be performed at this time — Operate REMOTE CONTROL key, operate IN SERVICE key, remove head telephone set.	
12a	Replace mechanism front cover.	
B. Repeat Dictate — Single Channel		
8	Operate ANNOUNCE key.	ANNOUNCE lamp lights. J relay operates and releases once per revolution of drum. At end of cycle — Head carriage returns to start position, and within approximately 2 seconds another cycle starts.

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STEP	ACTION	VERIFICATION
9	Release ANNOUNCE key.	ANNOUNCE lamp extinguished. Within one revolution — Drum stops.
10a	If announcement previously recorded is to be preserved — Operate ANNOUNCE key.	Accurately count the number of times J relay operates during one announcement cycle and record this data for use in Step 24a. <i>Note:</i> Include last operation which occurs as cycle is terminated.
11a	Release ANNOUNCE key.	
12	Operate REMOTE CONTROL key.	LOCAL CONTROL lamp extinguished. REMOTE CONTROL lamp lights.
13	Lift head from surface of recording band.	
14	Block RD1 relay operated.	Drum rotates. After one drum revolution — DICTATE lamp lights. One drum revolution after DICTATE lamp lights — ALM relay operates. RPD1 relay operates. ALARM lamp lights.
15	Restore head to surface of recording band.	
16	Remove block from RD1 relay.	ALM relay released. RPD1 relay remains operated.
17	Operate RD1 relay momentarily.	RPD1 relay released. ALARM lamp extinguished.
18	Block ALM relay nonoperated.	
19	Block RD1 relay operated.	Drum rotates.
20	Allow a complete cycle to occur. <i>Note:</i> The length of a complete cycle is the maximum recording time for which the mechanism has been adjusted.	At end of cycle — ALARM lamp lights. DICTATE lamp extinguished. RPD1 relay operates.
21	Remove block from RD1 relay.	
22	Operate ALARM DISABLE key momentarily.	ALARM lamp extinguished. RPD1 relay released.
23a	If announcement previously recorded is to be preserved — Operate LOCAL CONTROL key.	
24a	Using data obtained in Step 10a — Operate DICTATE key to BARGE-IN position, then count J relay operations and when J relay operates number of times recorded in Step 10a, immediately release DICTATE key.	

STEP	ACTION	VERIFICATION
25a	Operate ANNOUNCE key.	
26a	Monitor announcement.	Entire announcement is reproduced. Unrecorded interval at end of announcement is less than one revolution of drum. See Steps 27a and 28b.
27a	Release ANNOUNCE key.	
28b	If requirement of Step 26a is not met — Repeat Steps 24a through 27a. <i>Note:</i> Operations of J relay must be counted accurately and DICTATE key must be released immediately after correct number of J relay operations. If error was made in Step 10a, add or subtract one relay operation in Step 24a.	
29	Remove block from ALM relay.	
30a	If announcement previously recorded is to be preserved — Remove insulators from E, F, G relays.	
31a	Operate REMOTE CONTROL key.	
32	Operate IN SERVICE key.	
33	Remove head telephone set.	
34	Replace recorder-reproducer control unit and mechanism covers, secure coupling unit front panel.	

C. Voice Alarm — Dual Channel

15	Operate Channel 2 ANNOUNCE key.	Channel 2 ANNOUNCE lamp lights. Channel 2 drum rotates. Speech heard in head telephone set. Volume-indicating meter needle deflects occasionally (once or twice a second) to the region between -5 and 0.
16	Lift Channel 2 head from surface of recording band.	No speech heard in head telephone set. Volume-indicating meter needle stops deflecting. Within 3 drum revolutions — MINOR ALARM lamp lights. Channel 1 LIVE DICTATE lamp extinguished. Channel 2 ALARM lamp lights.
17	Restore head to surface of recording band.	
18	Release Channel 2 ANNOUNCE key.	

STEP	ACTION	VERIFICATION
19	Operate Channel 2 ALARM DISABLE key.	MINOR ALARM lamp extinguished. Channel 1 LIVE DICTATE lamp extinguished. Channel 2 ALARM lamp extinguished. Channel 2 ALARM DISABLE lamp lights.
20	Operate Channel 2 ALARM key.	Channel 2 ALARM DISABLE lamp extinguished.
21	Operate LOCAL CONTROL key to CHANNEL 1 position.	CHANNEL 1 lamp lights. CHANNEL 2 lamp extinguished. Channel 1 LIVE DICTATE lamp lights.
22	Operate Channel 1 ANNOUNCE key.	Channel 1 ANNOUNCE lamp lights. Channel 1 drum rotates. Speech heard in head telephone set. Volume-indicating meter needle deflects occasionally (once or twice a second) to the region between -5 and 0.
23	Lift Channel 1 head from surface of recording band.	No speech heard in head telephone set. Volume-indicating meter needle stops deflecting. Within 3 drum revolutions — CHANNEL ON LINE 1 lamp extinguished. CHANNEL ON LINE 2 lamp lights. MINOR ALARM lamp lights. Channel 1 LIVE DICTATE lamp extinguished. Channel 1 ALARM lamp lights. Channel 2 LIVE DICTATE lamp lights.
24	Restore head to surface of recording band.	
25	Release Channel 1 ANNOUNCE key.	
26	Operate Channel 1 ALARM DISABLE key.	Channel 1 ALARM DISABLE lamp lights. Channel 1 ALARM lamp extinguished. MINOR ALARM lamp extinguished. Channel 2 LIVE DICTATE lamp extinguished.
27	Operate Channel 1 ALARM key.	Channel 1 ALARM DISABLE lamp extinguished.
28	Operate Channel 1 ANNOUNCE key.	
29	Lift Channel 1 head from surface of recording band.	Within 3 drum revolutions — Channel 1 ALARM lamp lights. MINOR ALARM lamp lights. Channel 2 LIVE DICTATE lamp lights.
30	Restore head to surface of recording band.	
31	Release Channel 1 ANNOUNCE key.	

STEP	ACTION	VERIFICATION
32	Operate Channel 1 ALARM DISABLE key momentarily.	Channel 1 ALARM lamp extinguished. MINOR ALARM lamp extinguished. Channel 2 LIVE DICTATE lamp extinguished.
33	Operate LOCAL CONTROL key to CHANNEL 2 position.	
34	Operate Channel 2 ANNOUNCE key.	
35	Lift Channel 2 head from surface of recording band.	Within 3 drum revolutions — CHANNEL ON LINE 2 lamp extinguished. CHANNEL ON LINE 1 lamp lights. MINOR ALARM lamp lights. Channel 1 LIVE DICTATE lamp lights. Channel 2 ALARM lamp lights.
36	Restore head to surface of recording band.	
37	Release Channel 2 ANNOUNCE key.	
38	Operate Channel 2 ALARM DISABLE key momentarily.	Channel 2 ALARM lamp extinguished. MINOR ALARM lamp extinguished. Channel 1 LIVE DICTATE lamp extinguished.
39e	If Test D is not to be performed at this time — Operate LOCAL CONTROL key to OFF position, operate key to REMOTE CONTROL position, remove head telephone set.	
40e	Operate MINOR ALARM and MAJOR ALARM keys to ENABLE position, operate REMOTE CONTROL CIRCUITS and CENTRAL OFFICE CIRCUITS switches to MAIN position.	
41e	Replace mechanism covers.	

D. Major Alarm — Dual Channel

15	Block VAE2 relay nonoperated.	
16	Operate Channel 2 DICTATE key to BARGE-IN position.	Channel 2 drum rotates. After one drum revolution — Channel 2 DICTATE lamp lights.
17	Allow a complete cycle to occur. <i>Note:</i> The length of a complete cycle is the maximum recording time for which the mechanism has been adjusted.	At end of cycle — Channel 2 drum stops. Channel 2 DICTATE lamp extinguished. Channel 2 ALARM lamp lights. MINOR ALARM lamp lights. Channel 1 LIVE DICTATE lamp lights.
18	Release Channel 2 DICTATE key.	
19	Remove block from VAE2 relay.	

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STEP	ACTION	VERIFICATION
20	Operate CHANNEL LOCKED ON LINE key to CHANNEL 2 position.	CHANNEL LOCKED ON LINE 2 lamp lights. CHANNEL ON LINE 1 lamp extinguished. CHANNEL ON LINE 2 lamp lights. MAJOR ALARM lamp lights. Channel 1 LIVE DICTATE lamp extinguished. Channel 2 LIVE DICTATE lamp lights.
21	Operate RD relay momentarily.	MAJOR ALARM lamp extinguished. Channel 2 ALARM lamp extinguished.
22	Release CHANNEL LOCKED ON LINE key.	CHANNEL LOCKED ON LINE 2 lamp extinguished. MINOR ALARM lamp extinguished.
23	Operate TRANSFER key to BARGE-IN position momentarily.	CHANNEL ON LINE 1 lamp lights. CHANNEL ON LINE 2 lamp extinguished. Channel 2 LIVE DICTATE lamp extinguished.
24	Operate DUBBING key momentarily.	Dubbing cycle starts.
25	Monitor announcement.	Volume-indicating meter needle deflects occasionally (once or twice a second) to the region between -5 and 0. Announcement on Channel 1 is dubbed on Channel 2.
26	When dubbing cycle is completed — Operate TRANSFER key to BARGE-IN position momentarily.	CHANNEL ON LINE 1 lamp extinguished. CHANNEL ON LINE 2 lamp lights. Channel 2 LIVE DICTATE lamp lights.
27	Block VAE1 relay nonoperated.	
28	Operate LOCAL CONTROL key to CHANNEL 1 position.	CHANNEL 1 lamp lights. CHANNEL 2 lamp extinguished. Channel 2 LIVE DICTATE lamp extinguished.
29	Operate Channel 1 DICTATE key to BARGE-IN position.	Channel 1 drum rotates. After one drum revolution — Channel 1 DICTATE lamp lights.
30	Allow a complete cycle to occur. <i>Note:</i> The length of a complete cycle is the maximum recording time for which the mechanism has been adjusted.	At end of cycle — Channel 1 drum stops. Channel 1 DICTATE lamp extinguished. Channel 1 ALARM lamp lights. MINOR ALARM lamp lights. Channel 2 LIVE DICTATE lamp lights.
31	Release Channel 1 DICTATE key.	
32	Remove block from VAE1 relay.	

STEP	ACTION	VERIFICATION
33	Operate CHANNEL LOCKED ON LINE key to CHANNEL 1 position.	CHANNEL LOCKED ON LINE 1 lamp lights. CHANNEL ON LINE 2 lamp extinguished. CHANNEL ON LINE 1 lamp lights. MAJOR ALARM lamp lights. Channel 2 LIVE DICTATE lamp extinguished. Channel 1 LIVE DICTATE lamp lights.
34	Operate RD relay momentarily.	MAJOR ALARM lamp extinguished. Channel 1 ALARM lamp extinguished. <i>Note:</i> An erase cycle may occur at Channel 1 mechanism.
35	Release CHANNEL LOCKED ON LINE key.	CHANNEL LOCKED ON LINE 1 lamp extinguished. MINOR ALARM lamp extinguished.
36	Operate TRANSFER key to BARGE-IN position momentarily.	CHANNEL ON LINE 2 lamp lights. CHANNEL ON LINE 1 lamp extinguished. Channel 1 LIVE DICTATE lamp extinguished.
37	Operate DUBBING key momentarily.	Dubbing cycle starts.
38	Monitor announcement.	Volume-indicating meter needle deflects occasionally (once or twice a second) to the region between -5 and 0. Announcement on Channel 2 is dubbed on Channel 1.
39	When dubbing cycle is completed — Operate LOCAL CONTROL key to OFF.	
40	Operate key to REMOTE CONTROL position.	
41	Operate MINOR ALARM and MAJOR ALARM keys to ENABLE position.	
42	Operate REMOTE CONTROL CIRCUITS and CENTRAL OFFICE CIRCUITS switches to MAIN position.	
43	Remove head telephone set.	
44	Replace mechanism covers, secure front panel.	