

NO. 3A ANNOUNCEMENT SYSTEM CONTROL, VOLUME LIMIT INDICATOR AND TAPE AMPLIFIER CIRCUITS TESTS

1. GENERAL

1.01 This section describes a method of testing the control, volume limit indicator and tape amplifier circuits of the No. 3A announcement system.

1.02 The tests described are

- (A) Cut-In of Machines - Double Cut-In
- (B) Cut-In of Machines - Single Cut-In
- (C) Transfer of Machines
- (D) Manual Announcement
- (E) Emergency Recording and Announcing
- (F) Signal to Chief Operator
- (G) Speech Volume Checking Feature (Volume Limit Indicator)
- (H) Amplifier Tests.

1.03 Test (A) need not be performed on a routine basis since the procedures covered in this test are carried out during the normal operation of the equipment.

1.04 Tests should preferably be made during periods of light traffic.

1.05 It is necessary to have an operator at the turret while making all tests. All recording and announcing should be done by the operator using the latest bulletin. After each recording, the recording must be monitored in the normal manner before the cut-in service key is operated.

2. APPARATUS

2.01 One No. 528 receiver and a L2K cord equipped with a No. 289B plug at the other end (2W2A).

2.02 One No. 528 receiver and a No. 630 cord equipped with a No. 347A plug (2W28A).

2.03 One P3K cord equipped with a No. 110 plug at each end (3P15A).

2.04 One No. 528 receiver and a W2AB cord equipped with 360 type cord tips (2W21A).

2.05 No. 508A tools (relay blocking tools).

2.06 Two No. 411A Tools (test picks).

3. METHOD

(A) Cut-In Of Machines - Double Cut-In

3.01 Place machine 1 in service and one machine standing by and then operate the ERASE key. Machines 2 and 3 should start.

Then operate the RECORD key and record. Operate the MONITOR key associated with machine 2.

3.02 Block the H1 relay of volume limit indicator 2 operated. The HIGH lamp at the turret should light. Remove the blocking tool. The HIGH lamp should be extinguished.

3.03 Block the N relay of the volume limit indicator unoperated. After not more than 10 seconds the LOW lamp at the turret should light. Remove the blocking tool. The LOW lamp should be extinguished.

3.04 Operate the MONITOR key associated with machine 3. Operate the CUT IN SERVICE key.

3.05 Machine 2 should cut into service and machines 1 and 3 should stop. Note that the S3 relay is locked. The in service lamps for machine 2 (IN SERVICE at the turret and IN SERV at the control unit) should light.

3.06 With machine 2 in service operate the ERASE key. Machines 1 and 3 should start. Then operate the RECORD key and record. Operate the MONITOR key associated with machine 3. Then operate the MONITOR key associated with machine 1. Operate the CUT IN SERVICE key. Machine 3 should cut into service and the S1 relay should be locked. Machines 1 and 2 should stop. The in service lamps for machine 3 at the turret and at the control unit should light.

3.07 With machine 3 in service operate the ERASE key. Machines 1 and 2 should start. Then operate the RECORD key and record. Operate the MONITOR key associated with machine 1. Then operate the MONITOR key associated with machine 2. Operate the CUT IN SERVICE key. Machine 1 should cut into service and the S2 relay should be locked. Machines 2 and 3 should stop. The in service lamps for machine 1 at the turret and at the control unit should light.

(B) Cut-In of Machines - Single Cut-In

3.08 Place machine 1 in service. Then operate the MAKE BUSY key of machine 3 at the turret. The out of order lamps for machine 3 (OUT OF ORDER at the turret, OD at the control unit) should light. Restore the MAKE BUSY key to normal. The lamps should be extinguished.

3.09 Operate the MB (make busy) key of machine 3 at the control unit. The out

3.09 (Continued)

of order lamps for machine 3 at the turret and at the control unit should light.

3.10 Operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key associated with machine 2. Operate the CUT IN SERVICE key.

3.11 Machine 2 should cut into service and machine 1 should stop. Note that no S relays are operated.

3.12 The recording lamps of machine 1 (RECORDING at the turret and REC at the control unit) should flash.

3.13 With machine 2 in service, operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key of machine 1. Operate the CUT IN SERVICE key. The recording lamps should be extinguished. The S1 relay should lock operated.

3.14 With machine 2 in service, again operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key associated with machine 1. Operate the CUT IN SERVICE key.

3.15 Machine 1 should cut into service and machine 2 should stop. Note that no S relays are operated.

3.16 The recording lamps of machine 2 at the turret and at the control unit should flash.

3.17 With machine 1 in service operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key of machine 2. Operate the CUT IN SERVICE key. The recording lamps should be extinguished. The S2 relay should lock operated.

3.18 Restore the MB key of machine 3 to normal. Operate the MAKE BUSY key of machine 2 at the turret. The out of order lamps for machine 2 at the turret and at the control unit should light. Restore the MAKE BUSY key to normal. The lamps should be extinguished.

3.19 Operate the MB key of machine 2 at the control unit. The out of order lamps for machine 2 at the turret and at the control unit should light.

3.20 Operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key associated with machine 3. Operate the CUT IN SERVICE key.

3.21 Machine 3 should cut into service and machine 1 should stop. Note that no S relays are operated.

3.22 The recording lamps of machine 1 at the turret and at the control unit should flash.

3.23 With machine 3 in service, operate the ERASE key. Then operate the RECORD key and record. The recording lamps should be extinguished. The S1 relay should lock operated.

3.24 With machine 3 in service, again operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key of machine 1. Operate the CUT IN SERVICE key.

3.25 Machine 1 should cut into service and machine 3 should stop. Note that no S relays are operated.

3.26 The recording lamp of machine 3 at the turret and at the control unit should flash.

3.27 With machine 1 in service operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key of machine 3. Operate the CUT IN SERVICE key. The recording lamps should be extinguished. The S3 relay should lock operated.

3.28 Restore the MB key of machine 3. Operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key. Operate the CUT IN SERVICE key.

3.29 Operate the MAKE BUSY key of machine 1 at the turret. The out of order lamps for machine 1 at the turret and at the control unit should light. Restore the MAKE BUSY key to normal. The lamps should be extinguished.

3.30 Operate the MB key of machine 1 at the control unit. The out of order lamps for machine 1 should light. Restore the key to normal.

(C) Transfer of Machines

3.31 With one machine in service and one standing by, block the H relay of the volume limit indicator 1 unoperated. After not more than 30 seconds, the PS relay should lock operated to remove the pad. Remove the blocking tool from the H relay.

3.32 Block the N relay of the volume limit indicator unoperated. After 30 to 60 seconds this should cause the operation of a minor floor alarm and a minor alarm at the operating and recording room and transfer the load to the standby machine. Remove the blocking tool from the N relay. Operate the ALM RLS (alarm release) key at the control unit to silence the audible alarm at the floor alarm board and the RLS (release) key in the operating room to silence the alarm at the operating and recording room.

3.33 Note that the PS relay is released. Also note that the CW relay of the volume limit indicator 2 is operated. The AL and L relays should be locked.

3.34 Block the H relay of the volume limit indicator 2 unoperated. After 30 to 60 seconds the PS relay should lock operated.

3.35 Restore the ALM RLS key to normal. Block the N relay of volume limit indicator 2 unoperated. After not more than 30 seconds this should cause a major floor alarm and a major alarm at the operating and recording room. Remove the blocking tool from the N relay. Also note that under this condition the A relay of the distributing circuit does not operate when the ST relay of that circuit is operated. Also note that the AL relay of the outgoing trunk to the subcenter is operated.

Caution: Immediately connect the announcing and recording set to the MAN (manual) jack of one of the two machines just used at the turret and, if the CALL WAITING lamp is lighted, announce manually. Note that the A relay of the distributing circuit operates when the associated ST relay is operated. Also note that the AL relay of the outgoing trunk to the subcenter is released.

3.36 Silence the floor alarm by operating the ALM RLS key at the control unit. Silence the alarm at the operating room by operating the ALM RLS key at the turret. Operate the TBL RLS (trouble release) key at the control unit. The alarm guard lamp where provided will remain lighted until the ALM RLS key is restored. Check that the AL, ALL and L relays also release. Restore the ALM RLS key to normal.

3.37 Operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR keys successively on both newly recorded machines. Operate the CUT IN SERVICE key. Remove the announcing and recording set from the MAN jack.

3.38 Operate the TRANS (transfer) key at the control unit. This should cause the transfer of machines and operate the alarm. Operate the TBL RLS key.

3.39 Repeat 3.37 except with regard to the recording and announcing set since this is not used. Repeat 3.38.

3.40 Repeat 3.39.

(D) Manual Announcement

3.41 With one machine in service insert the plug of the recording and announcing set into the associated MAN jack at the operators turret. The in service lamps for the machine should be extinguished.

3.42 Announce manually and check for the transfer to manual announcements by

listening in at the LOAD MON (load monitoring) jack at the control unit.

3.43 If the CALL WAITING lamp is not lighted at the turret block the ST relay of the distributing circuit operated. The lamp should light. Remove the blocking tool.

3.44 Block the N relay of the volume limit indicator 1 unoperated. After not more than 10 seconds the LOW lamp at the turret should light. Remove the blocking tool.

3.45 Block the H relay of the volume limit indicator operated. The HIGH lamp at the turret should light. Remove the blocking tool.

3.46 Repeat the operations outlined in 3.41 and 3.42 from MAN jacks 2 and 3.

3.47 Remove the plug of the recording and announcing set from the MAN jack.

(E) Emergency Recording and Announcing

3.48 With one machine in service, operate the MAKE BUSY keys of the other two machines at the turret. Connect the announcing and recording set to one of the MAN jacks of the associated busy machines at the operators turret.

3.49 Operate the ERASE key. Then operate the RECORD key and record. Operate the associated MONITOR key. Remove the recording and announcing set. Operate the CUT IN SERVICE key. The machine should be connected across the load. Restore the MAKE BUSY keys to normal.

3.50 Operate the ERASE key. Then operate the RECORD key and record. Operate the MONITOR key of the next machine. Operate the CUT IN SERVICE key.

3.51 Repeat 3.48, 3.49 and 3.50.

3.52 Repeat 3.48 to 3.50.

3.53 Place machine 3 in service and with machine 1 standing by, connect a receiver to the LOAD MON jack at the control unit. Insert one end of the patching cords into the OUT (MACH 1) jack at the control unit. Also insert a No. 47A plug into the MON (MACH 1) jack. As soon as the announcement is finished on the machine 3, patch the other end of the patching cord to the LOAD jack. This should cut machine 3 off the load. Check that machine 1 starts and is placed across the load. Remove the No. 47A plug and note that machine 1 continues to run.

3.54 At the end of the announcement remove the patching cord from the OUT (MACH 1) and LOAD jacks. Machine 1 should stop and machine 3 should take the load.

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3.55 Check that the latest recording is on machine 2. Repeat 3.53 and 3.54 except plug the patching cord into the OUT (MACH 2) jack and the No. 47A plug into the MON (MACH 2) jack. This will place machine 2 across the load.

3.56 Place machine 1 in service. Check that the latest recording is on machine 3. Then repeat 3.55 except plug into the OUT (MACH 3), and MON (MACH 3) jacks. This will place machine 3 across the load. Remove all plugs.

(F) Signal to Chief Operator

3.57 Operate the SUPERVISOR key at the turret, and check that the associated lamp and buzzer function in the operating room. Release the key.

(G) Speech Volume Checking Feature (Volume Limit Indicator)

3.58 Patch the 1000 \sim jack at the control unit to the TST jack of the volume limit indicator. Operate the ST (start) key to the first operated position for approximately 30 seconds and then operate the key to the second operated position. The vacuum tubes should be energized.

3.59 Block the (N) relay unoperated. Operate the L (low) key. Then operate the TST key, the L lamp at the volume indicator should light.

3.60 Remove the blocking tool from the N relay. The L lamp should be extinguished. Release the TST key.

3.61 Operate the H (high) key. Operate the TST key. The H lamp should flash.

3.62 Restore the TST key and then the ST key. Remove the plug from the TST jack.

(H) Amplifier Tests

3.63 General: Patch the 1,000 \sim -24 jack to the TST REC (test record) jack at the control unit. Plug the receiver into the MON jack of the idle (not standby) machine. Operate the transmission testing ERASE key and then the REC (record) key associated with this machine at the control unit. The 1,000 \sim tone will be recorded on the tape.

3.64 Tape Amplifier: Measure the output of the amplifier by operating the associated REC AMP key at the control unit. There should be a reading of -5 ± 1 on the VU scale of the meter. Restore the key to normal.

3.65 No. 109B Amplifier: Measure the output of the 109B amplifier by operating the corresponding PWR (power) key at the control unit. A reading of $+2 \pm 0.5$ should be obtained.

3.66 Restore the key to normal.

3.67 Operate the ERASE key and make a regular recording. Operate the MONITOR and CUT IN SERVICE keys.

3.68 Repeat 3.63 to 3.67 for the other two machines.

4. REPORTS

The required record of these tests should be entered on the proper form.