L3 COMMUNICATIONS FA2100 COCKPIT VOICE RECORDER - ADJUSTMENT/TEST

1. General

    A. This section provides information necessary to do an operational test for the L3 Communications FA2100 Cockpit Voice Recorder System.

2. Tools and Equipment

Table 501. Tools and Equipment

NAME	NUMBER	MANUFACTURER	USE
Portable Interface Unit	17TES0043	L3 Communications Box 3041 Sarasota, FL 34230	To test FA2100 CVR.
Headset		Available Locally	To test FA2100 audio.
Pinglite Tester	PL-3	Dukane Corp. Ultrasonics Division 2900 Dukane St. Charles, IL 60174	To test ULD.

3. FA2100 Cockpit Voice Recorder (CVR) Operational Test

    A. Do an FA2100 CVR Operational Test.

        CAUTION: **The actual CVR test for Channel 1 through Channel 4 must be completed within 30 minutes of the start recorder time, in order to receive the crew audio on the specified channels. If at any time the recorder time is longer than one half hour, a restart of this functional test procedure is required. The time that is recorded will be monitored from the portable interface unit (piu) tester which indicates the actual elapsed time of the recorded audio.**

        NOTE: **Channel 1 through 4 audio sources are provided for a high quality (HQ) encoder for half hour continuous recording which records over the previous recording every 30 minutes. Channel 5 and 6 audio sources are provided for a standard quality (SQ) encoder for 120 minutes continuous recording.**

        (1) Make sure the POWER switch, located on the left switch panel, is OFF.

        (2) Make sure the AVIONICS POWER switch, located on the left switch panel, is OFF.

        (3) Connect the FA2100 Portable Interface Unit (PIU) tester to the FA2100 CVR with the test cable provided.

        (4) Connect the external power cart to the external power receptacle and adjust to 29.0 VDC, +0.25 or -0.25 VDC.

        (5) Engage avionics and electrical circuit breakers as required.

        (6) Make sure the POWER switch, located on the left circuit breaker panel, is in the ON position.

        (7) Make sure the AVIONICS switch is in the ON position.

        (8) Make sure all necessary avionics power switches are ON.

        (9) Make sure the CENTER PANEL LIGHTS circuit breaker, located on the left circuit breaker panel, is engaged.

        (10) Rotate the appropriate Dimming Knob to full clockwise position.

        (11) Make sure the cockpit voice recorder control panel legend and nomenclature are at full bright and constant in intensity.

        (12) Adjust for the desired level of brightness.

    B. Do a Power Compliance Verification Test.

        (1) Make sure the POWER switch, located on the left circuit breaker panel, is in ON position.

        (2) Make sure the AVIONICS switch, located on the left circuit breaker panel, is the OFF position.

        (3) Engage the cockpit voice recorder circuit breaker, located on the left circuit breaker panel.

        (4) Disengage the AUDIO 1 and AUDIO 2 circuit breakers, located on the right circuit breaker panel.

        (5) Make sure the FA2100 CVR is operational when the DC POWER switch is in ON position, only when the cockpit voice recorder circuit breaker is engaged.

C. Do an FA2100 CVR Ground/Self-Test.

NOTE: **This test checks operation of the FA2100 CVR self-test and observation of the COCKPIT VOICE RECORDER annunciator response.**

(1) Bulk erase the FA2100 CVR. Refer to FA2100 Bulk Erase.

(2) Attach a headset to the HEADSET jack on the CVR control panel.

(3) Push and hold the CVR TEST button located on the CVR control panel for a minimum of five seconds.

(4) Listen for a 640 Hz tone in the headset.

NOTE: **An internal 650 Hz test tone generator is keyed and sequentially switches through the six channels. Each channel receives the test tone for approximately 0.5 seconds.**

(5) Make sure the green cockpit voice recorder TEST annunciator, located on the cockpit voice recorder control panel, comes on, which indicates a successful test.

NOTE: **A tone is generated every four seconds on Channel 1 only and is heard throughout the entire recorded tape.**

D. Do a Pilot's Received Audio Test.

(1) Set the Portable Interface Unit (PIU) to channel 3.

(2) Monitor the audio through the PIU speaker.

(3) Make sure audio is heard separately from the pilot's boom microphone.

E. Do a Copilot's Received Audio Test.

(1) Set the Portable Interface Unit (PIU) to channel 2.

(2) Monitor the audio through the PIU speaker.

(3) Make sure audio is heard separately from the co-pilot's boom microphone.

F. Do a Cockpit Area Microphone Audio Test.

(1) Set the Portable Interface Unit (PIU) to channel 4.

(2) Monitor the audio through the PIU speaker.

(3) Make sure audio is heard from the cockpit area microphone, located on the CVR control panel.

G. Do a Cabin PA Audio Test (If Installed).

(1) Set the Portable Interface Unit (PIU) to channel 1.

(2) Monitor the audio through the PIU speaker.

(3) Make sure both pilot and copilot cabin PA audio can be heard.

4. Impact Switch Test

A. Do an Impact Switch Test.

(1) Make sure the impact switch, located under the tailcone aft avionics shelf is tripped OPEN and the impact switch lamp comes on.

(2) Make sure the CVR is not receiving power.

(a) Airplanes utilizing Garmin G1000/G1000 NXi System Software, make sure the white CVR FAIL and FDR FAIL CAS annunciations appear on both primary flight displays.

(3) If not tripped OPEN, manually trip it to the OPEN position.

NOTE: **A manual reset operation of the impact switch causes the switched output to be turned ON and the impact switch lamp to extinguish. Upon impact, the impact causes the output to be turned OFF and the impact switch lamp to come on.**

5. Underwater Locator Device (ULD) Test

A. Do an Underwater Locator Device (ULD) Test.

(1) Remove the Velcro collar from the Pinglite Model PL-3 Tester.

(2) Apply the spring end of the Pinglite Model PL-3 Tester firmly to the ULD.

NOTE: **The ULD is physically attached to the FA2100 CVR Locator Beacon.**

(3) Make sure the center spring is making contact with the center pin of the water switch.

      (a)   With the center pin shorted to the center pin of the water switch, depress and hold the remaining three springs of the Pinglite PL-3 Tester against the ULD body.

      (b)   Listen for audible pinging and make sure the LED flashes with each output pulse indicating its operation.

      (c)   If audible pinging is not heard, or the LED does not flash, remove the FA2100 CVR and return to the Radio Lab for retest and/or rejection of the Underwater Acoustic Beacon.

6.   **FA2100 CVR Bulk Erase**

   A.   Bulk Erase the FA2100 CVR.

      (1)   Open one or both aft doors.

      (2)   Make sure the impact switch (5G) is set to CLOSED.

      (3)   Make sure the impact switch annunciator goes off.

      (4)   Push and hold the ERASE button on the FA2100 CVR control panel for a minimum of 2 seconds and then release.

      (5)   Make sure the erase function worked by listening for a loud 400 Hz tone lasting for 5 to 10 seconds in the PIU headset.

      (6)   Remove all test equipment.

      (7)   Return aircraft to original configuration.