



Consumer Product Service
Manager of Tehnical Support
TECH TIP

number 5

MODEL: ATARI 410 Recorder

DATE: 11/17/82

SUBJECT:

138, 140, and 143 Errors

DESCRIPTION

It is a common occurrence for a customer to experience problems while trying to load cassette tapes with the 410 program recorder.

TROUBLESHOOTING

We have separated troubleshooting into two section: one for the servicer and one for the user. The user section has purposely been put on a separate page to allow copies to be made for distribution to users.

SERVICER

1. Periodic Maintenance

Problem: Failure to perform periodic maintenance. Dirty pinch roller or capstan can cause uneven tape speed and damage media. Buildup of oxide residue on the read/write head can interfere with proper operation.

Solution: Perform periodic maintenance as outlined in the 410 Operator s Manual.

2. Peripheral Connection

Problems: The 410 is connected through a peripheral (810, 850, 820, 822) that does not properly pass on the signal to the console.

Solution: Connect the 410 directly to the console and repair the defective peripheral.

3. OS Revision B **Incompatibility**

Problem: The software is not compatible with Revision B of the OS. All ATARI software is fully compatible with Revisions A or B but some third party titles are not compatible.



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Solution: The third party vendors usually are able to replace the software with an updated version. It is possible to determine what version of the OS is installed by checking memory location 58383. From BASIC: PRINT PEEK (58383) (RETURN). A value of 56 indicates Revision A whereas 0 indicates Revision B.

4. PAL Operating System

Problem: An international PAL version of the OS is installed instead of domestic NTSC version.

Solution: Install a domestic 10K ROM. It is possible to determine what version of the OS is installed by checking memory location 58383. From BASIC: PRINT PEEK(58383) (RETURN). A value of 56 or 0 indicates NTSC whereas 249 indicates PAL.

5. 410 Motor Control

Problem: The console does not properly control the 410 motor. After a cold start in BASIC, merely pushing PLAY on the 410 should not cause the tape to begin moving, POKE 54018,52 should start the motor and POKE 54018,60 should stop the motor.

Solution: Check to see if transistor Q107 on the 800 or 4102 on the 400 motor control line is improperly shorted to ground.

6. 410

Problem: Faulty I/O cable, drive mechanism, or electronics, necessitates repair or replacement of the 410.

Solution: Follow the procedures in the Field Service Manual.

If you require further clarification call:

Inside California
(800) 672-1466

Outside California
(800) 538-1535



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USER

I. New 410

Problem: Many ATARI cassette-based products have loading problems on the newer model of the 410 (with PAUSE and no carrying handle) but not on the older 410. The newer 410 has a more powerful amplifier which raises previously insignificant background noise to significant levels and causes error conditions when interpreted as data. All ATARI cassette-based products have been remastered and the finished goods stock was replaced as of March 1, 1982.

Solution: Replace the media with inventory acquired after March 1, 1982.

2. **System Reset**

Problem: Pressing SYSTEM RESET does not reset the data I/O line in POKEY. Subsequent use of CSAVE is unreliable because the data I/O line is not clear, POKEY sends garbage, and the data stored is unrecoverable.

Solution: Avoid using SYSTEM RESET. Before using CSAVE or CLOAD, always execute a LPRINT command.

NOTE: Executing a serial bus command properly resets POKEY and clears the data I/O Line. The simplest serial bus command to execute is LPRINT. If a printer is not attached when the LPRINT is executed, an error 138 occurs. This occurence is normal and does not interfere with the reset of POKEY.

3. **Pre-recorded Tape Positioning**

Problem: Tape is improperly positioned.

Solution: Pre-recorded tapes should load properly if rewound completely. If not, manually wind the leader onto the take-up reel before attempting the load.

4. **User-Recorded Tape Positioning**

Problem: Tape is improperly positioned relying on the counter.

Solution: Store only one program per side of tape positioned manually at the end of the tape leader.



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5. Faulty **Pre-recorded** Media

Problem: Tapes produced in mass quantity are not individually verified to load **successfully** because of sampling techniques.

Solution: Replace the tape.

6. . Faulty User-Recorded Media

Problem: The oxide coating on audio cassette tape is subject to momentary dropouts that does not record data.

Solution: Replace the tape.

7. Worn Media

Problem: Tapes stretch and warp after prolonged normal usage.

Solution: Replace the tape. Avoid leaving the PLAY, ADVANCE, and REWIND button engaged after tape movement is completed.

8. Magnetic Field

Problem: Data is altered during transmission because of the 410 I/O cable s close proximity to a magnetic field.

Solution: Do not set the 410 on or **close** to a TV or power transformer.

9. **Vibration**

Problem: Data is altered during transmission because the 410 was bumped, moved, or jarred.

Solution: Keep the 410 stationary during data transmission.

10. **CRO²** Tape

Problem: The bias of **CRO²** tape is incompatible with the 410.

Solution: Use normal **ferrite** audio tape.



Consumer Product Service
Manager of Technical Support
TECH TIP

HCD
number 9

MODEL: 410 Cassette Recorder

DATE: February 9, 1983

SUBJECT:

410 Cassette Recorders that register #143 error codes.

DESCRIPTION:

The following procedures and checklist may help to correct problems signified by #143 error codes.

HEAD ALIGNMENT PROCEDURE

1. Connect the suspected bad recorder to your 400 system.
2. Check for the following component modifications in the **Chelco** unit only. These should already be present in the **Transtek** unit.

R105	50 Ohms
R112	56K
R109	58K
C100	50pf
C107	50pf

If the values of the components on the unit are not correct, replace them.

3. Clean the head and tape drive **rollers**. Check for stretched/worn belts.
4. Place the Test Tape in the unit.
5. a. Put scope probe on A101, Pin 11 (refer to Head Alignment procedure of Section IV of the Field Service Manual).
- b. Type: POKE 54018,52 (turns motor on without error or actual load)
Press: RETURN (on computer)
This allows the tape to run continuously when PLAY is pressed on the recorder.
Press: PLAY (on recorder)
- c. Adjust head-adjust screw **clockwise** or counter-clockwise and look for a signal of 300MV or greater (The manual's reference to a 50MV signal is incorrect and will be corrected in the next revision of the manual.). Refer to Figures 1 and 2 on the following page for examples of waveform patterns before and after head alignment. (If signal stops, rewind tape and press PLAY again. Repeat procedure as necessary until alignment is complete.)



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MODEL: 410 Cassette Recorder (Continued)

DATE: February 9, 1983

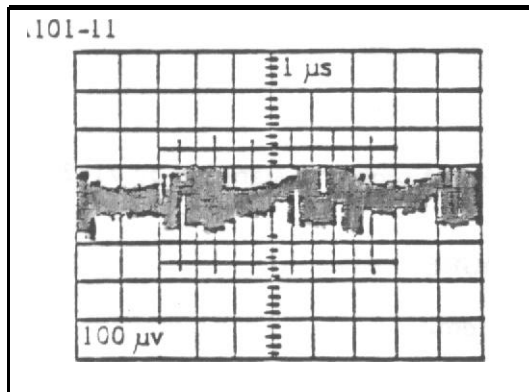


Figure 1. Output Signal
of the Preamplifier
Before Head Alignment

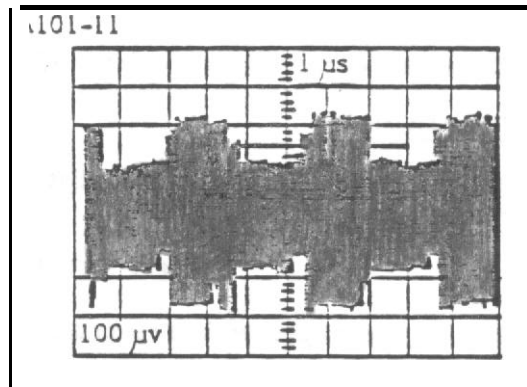


Figure 2. Output Signal
of the Preamplifier
After Head Alignment.

6. Replace unit into covers.
7. Rewind tape.
8. Type: CLOAD
The tape should load.
9. a. Use a blank tape.
b. Rewind.
c. Type: CSAVE
When READY appears, rewind and type CLOAD and press RETURN.
READY should appear when the tape stops running. The program should execute upon receiving the correct command.
d. Reassemble if no errors are found.



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9

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HEAD ALIGNMENT SYMPTOM CHECKLIST*

<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>
1) Alignment procedure O.K., signal at pin 11 of A101 O.K., but 410 errors on CLOAD.	I/C LM324
2) No signal at Pin 12 of A101. Unit CLOADS O.K., but will not CSAVE.	PB/Rec Head
3) Will not CSAVE or CSAVE Intermittent.	C117
4) No audio.	A101
5) Signal on Pin 6 Or 2 of A100 incorrect Note: sign& may also be seen on Pins 7 and 1 of A100.	Poly capacitors 820pf before LM324
6) Door won't close : physically broken at hinge area or missing spring clips on inside of door.	Replace door
7) Play button not staying engaged, record button not engaging (broken record detector). Tape jamming or bad rewind.	Replace tape deck
8) Cassette tension spring loose or weak.	Replace or reposition springs in the door. Replace or reposition rear spring holding cassette into head.

*Symptom and probable cause are listed with most common failure first.

DIFFICULTY REPORTING

If you have questions or need further assistance, call the Atari Techline Specialist:

Inside California
(800) 672-1466

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(800) 538-1535