OWNER'S MANUAL

TEAC®

Multitrack Series

A-3440

4-Channel Multitrack Tape Deck with SIMUL-SYNC

5101605100

Introduction

The new TEAC A-3440 represents another advancement on an already widely accepted technological base. The previous A-3340S with SIMUL-SYNC established the popularity of four channel tape decks with over-dub capability. To a large segment of people who are seriously involved in creative music, both as artists and as professionals, decks such as the TEAC trail blazing A-3340S satisfied a need. Now the A3440 goes a step further by utilizing the experience gained from producing truly professional tape decks, such as the TEAC TASCAM 80-8, and blending in the "hands on" experience obtained from actual users of the A-3340S. The result of this improved mix of raw talent and product artistry is your A-3440. TEAC wishes you Good Luck and fine recording with your new A-3440.

This Unit is factory adjusted for Scotch Master Tape #10R-3600.

These tapes may also be used.

• SCOTCH	#250
• MAXELL	UD, UD-XL, LN (NEW)
• SONY	DUAD, SLH
• TDK	AUDUA L Series,
etc.	T Series

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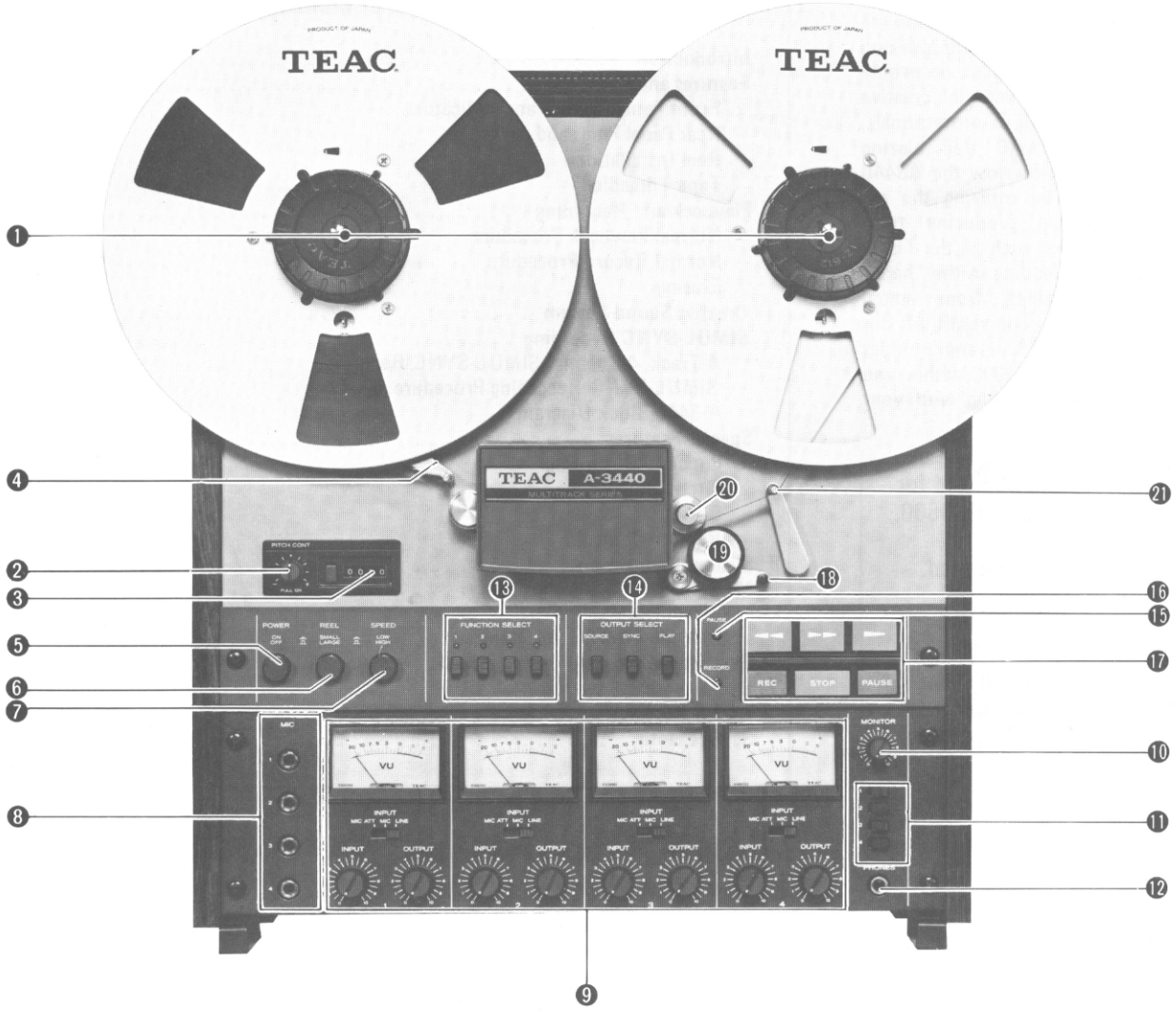
This tape deck has a Serial Number located on the rear panel. Please record the Model Number and Serial Number and retain them for your records.

Model Number _____

Serial Number _____

* dbx noise reduction system made under license from dbx, Incorporated. The word dbx and the Symbol are trademarks of dbx, Incorporated.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



Front Panel Controls and Indicators

❶ Reel Holders with NAB hub adapters
"Quick-Lok" reel holders with included adapters for 10-1/2" reels.

❷ PITCH CONT
Pull out knob and turn it to allow control of selected tape speed by ±5 %. When the knob is centered or pushed in tape speed will be precisely 7-1/2 ips or 15 ips as selected by the SPEED switch.

❸ Index Counter with reset button
Use the index counter for a numeric reference to desired locations on the tape.

❹ Tape Tension Arm
Moves to maintain proper tape tension and to help smooth out tape movement during mode changes.

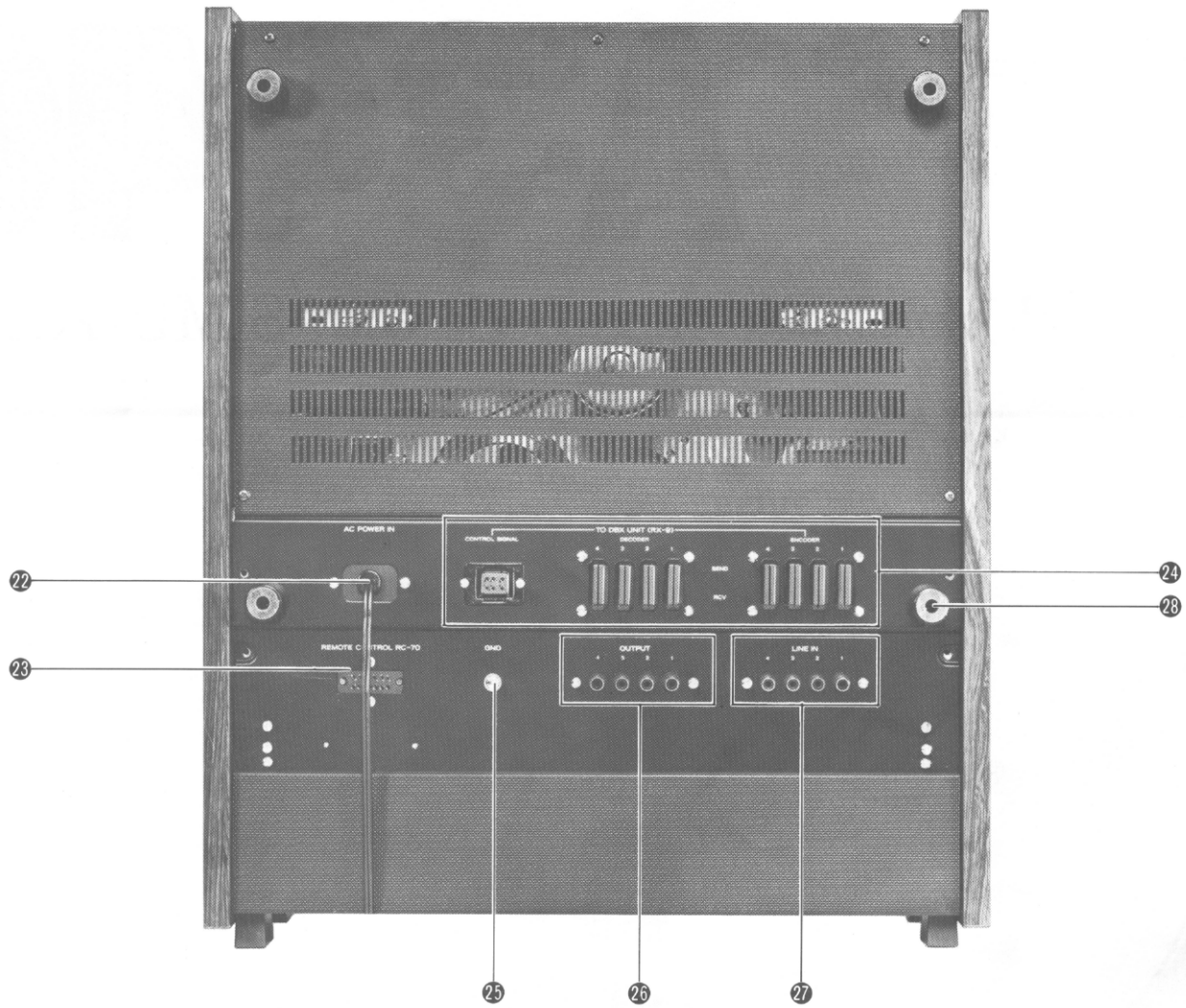
❺ POWER Switch
Depress the switch to apply AC power to the deck.

❻ REEL Size Selector Switch
Controls back tension of the supply reel. Set it to SMALL for 7" reels or LARGE for 10-1/2" reels.

❼ SPEED Selector Switch
Controls the record/play speed of the tape transport: LOW for 7-1/2 ips, HIGH for 15 ips. Also selects appropriate record equalization.

❽ MIC Jacks
Front panel input jacks for up to four unbalanced low or high impedance microphones.

❾ Input/Output Amplifiers (4)
Four independent input/output amplifiers each with INPUT selector switch, level controls and wide scale VU meter.



⑩ MONITOR Level Control
Controls volume of monophonic sound at PHONES jack.

⑪ Monitor Channel Selector Switches
Four switches to select the channel to be monitored at PHONES jack. Depress each switch to select a channel. One, two, three or four channels can be selected at the same time.

⑫ PHONES Jack
8 ohm stereo or monophonic headphones can be connected to this jack for monitoring of the sound selected by the OUTPUT SELECT switches. This output is monophonic.

⑬ FUNCTION SELECT Switches with Indicators
Depress to allow any channel to go to record mode. Indicator above the switch will light to show that the switch is depressed. See RECORD Indicator explanation.

⑭ OUTPUT SELECT Switches (3)
These three inter-locked switches allow selection of the signal fed to the VU meters, PHONES jack and OUTPUT jacks on the rear panel of the deck.

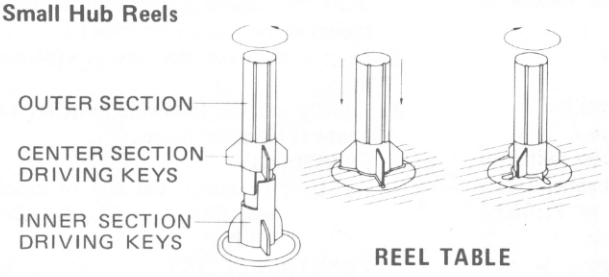
SOURCE: Selects MIC or LINE IN signal (in conjunction with INPUT switches on input/output amplifier 9).

SYNC: Selects playback sound off-the-tape via the record head of any channel whose FUNCTION SELECT switch (13) is not depressed.

PLAY: Selects playback sound off-the-tape via the normal play head.

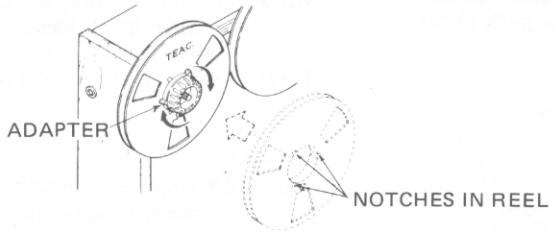
⑮ PAUSE Indicator
This indicator lights when the deck is in record pause mode.

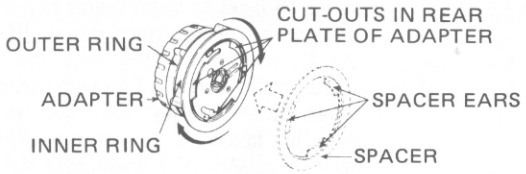
Reel Installation
Small Hub Reels



REEL TABLE

Large Hub Reels





Tape Threading

*Carefully unwind (pull out) approximately 30 inches (75 cm) of tape from the supply reel. Thread this tape in the following manner: over the left tension arm, under the guide post, under and through the head housing, between the pinch roller and capstan, under and around the right shut-off arm, then onto the take-up reel.

*Secure the end of the tape to the take-up reel by holding the end of the tape in the slot while rotating the reel several turns counter-clockwise (CCW).

*Continue rotating the take-up reel until the tape is no longer loose. Correct tension will raise the shut-off arm from the 3 o'clock position (↔) to the 12 o'clock position (↑).

⑯ RECORD Indicator

This indicator lights when the deck is in record or record pause mode. It flashes on and off when any FUNCTION SELECT switch is depressed and the deck is not in record or record pause mode.

⑰ Transport Control Panel

Six pushbutton micro switches to control tape transport operation.

⑱ Cue Lever

Move this cue lever up to retract the tape lifters for high speed cueing during fast forward or rewind operation, and for manual cueing. Be sure to push this lever down when cueing operation is not being used.

⑲ Pinch Roller

⑳ Capstan

㉑ Shut-off Arm

The shut-off arm will drop down to the right if the tape breaks, runs out or becomes very loose to shut off power to the capstan motor. This arm also helps to smooth tape travel.

Rear Panel Plugs and Jacks

㉒ AC POWER IN Cord

㉓ REMOTE CONTROL RC-70 Jack

Optional RC-70 remote control may be connected to allow control of the transport from up to16 feet away.

㉔ TO DBX UNIT (RX-9)*

An optional DBX UNIT (RX-9) can be connected to the A-3440 to provide increased dynamic range and improved signal-to-noise ratio.

㉕ Ground Terminal (GND)

㉖ OUTPUT Jacks

These four output jacks may be connected to a mixer (such as the TEAC TASCAM MODEL 2A) or to other audio equipment which will accept these line outputs.

㉗ LINE IN Jacks

These jacks can be connected to a mixer or other source.

㉘ Feet

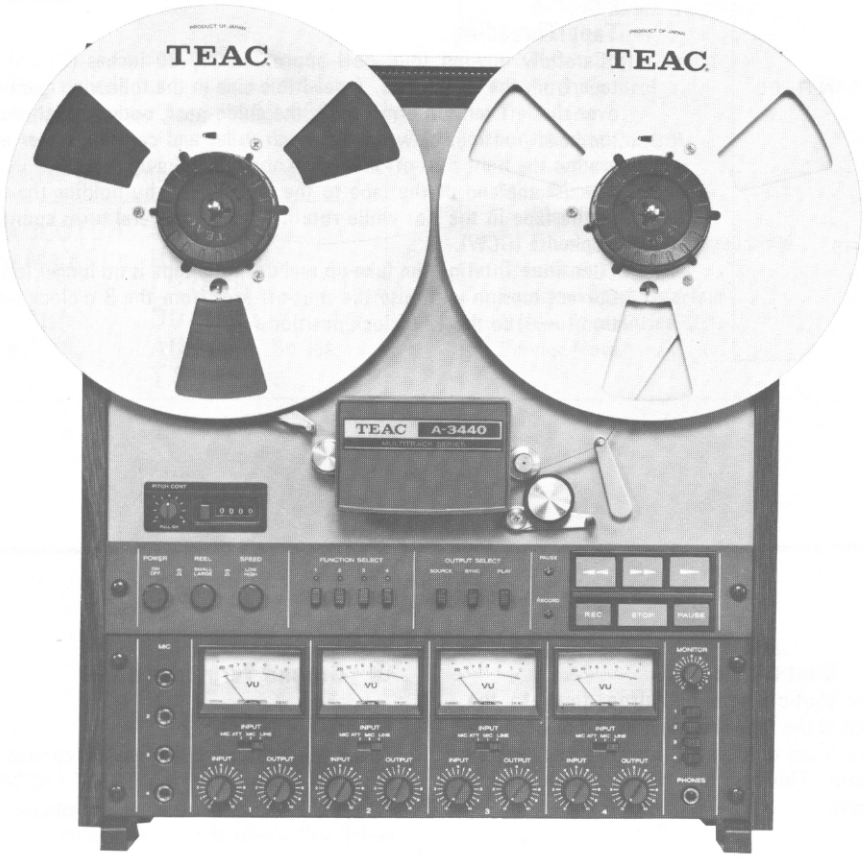
These feet allow the A-3440 to be operated from a horizontal position.

*See the RX-9 Owner's Manual for information about dbx recording.
NOTE: When the optional DBX UNIT is not connected the eight jumper plugs must be installed between the SEND and RCV jacks to allow proper operation of the A-3440.

Playback and Recording

Normal Playback Procedure

1. Load and thread the pre-recorded tape on the A-3440 as explained on page 4. If the tape was left in the "tails out" condition, load the tape on the right reel table and thread the tape to the left reel table. Then, rewind the tape to the beginning.
2. Initially set all the switches and knobs as indicated below.
   PITCH CONT – Depressed
   REEL – To match the size of the supply reel. SMALL – 7", LARGE – 10-1/2".
   SPEED – To match the speed at which the tape was recorded.
   FUNCTION SELECT – All released to prevent accidental erasure of the tape
   OUTPUT SELECT – PLAY
   INPUT knobs – 0
   OUTPUT knobs – About position 7
   MONITOR – About position 7
   MONITOR selector – Depress switch to hear selected channel. Note that the sound at PHONES jack is monophonic.
3. Begin playback by depressing ▶ button.
4. The PITCH CONT can be pulled out and turned left or right to change the tape speed by ±5 % to vary the pitch of the playback sound.

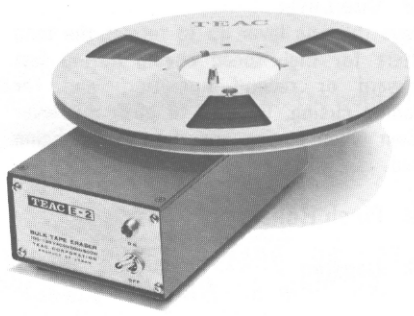


Normal Record Procedure

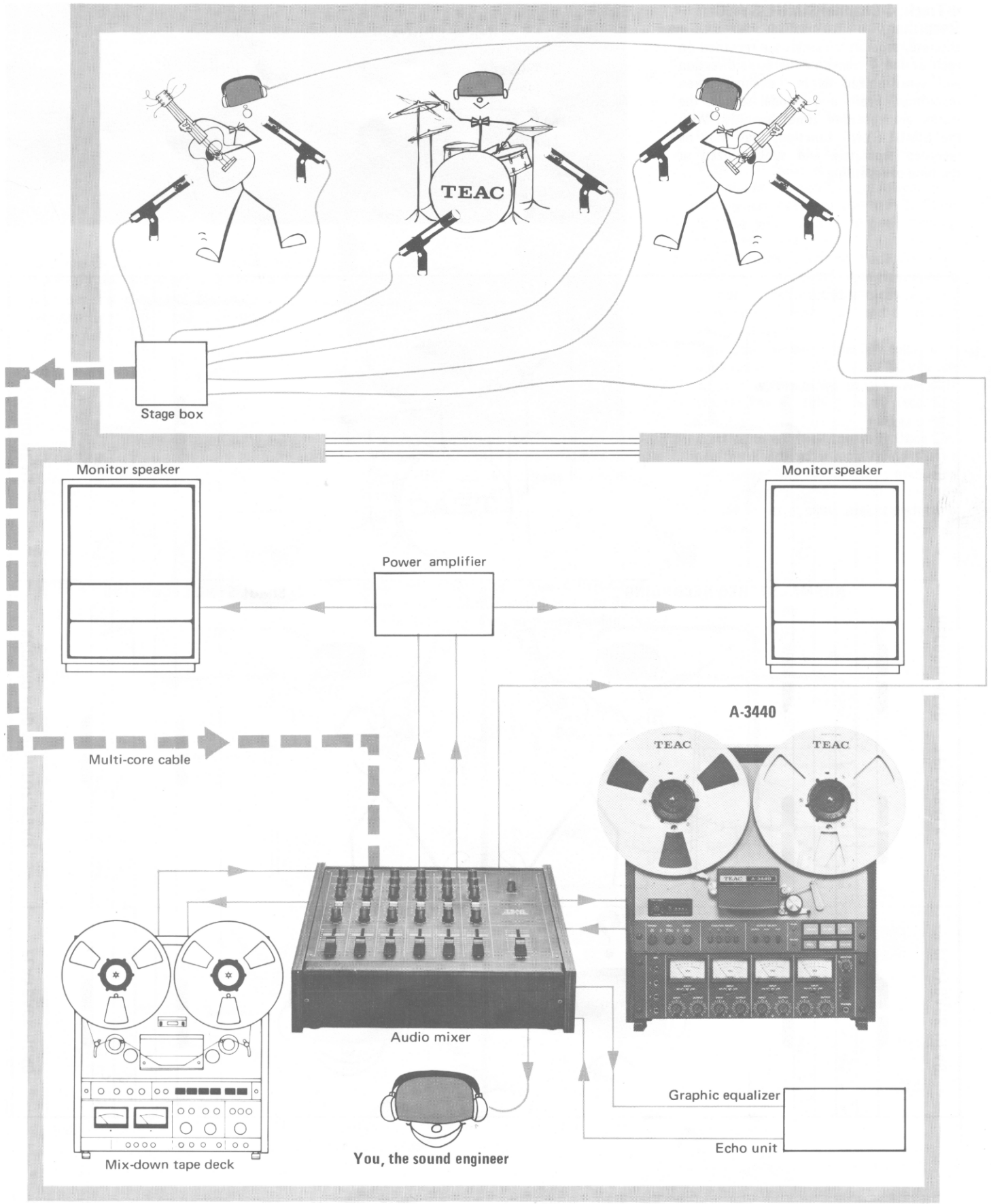
1. Make the desired system connections as shown in the diagram on page 10.
2. Load and thread the tape as explained on page 4.
3. Initially set the following switches and knobs as indicated below.
   POWER – ON
   REEL – To match the size of supply reel SMALL – 7", LARGE – 10-1/2"
   FUNCTION SELECT – Depress for each channel to be recorded
   OUTPUT SELECT – SOURCE
   INPUT Selector – MIC or LINE to match input being used on each channel
   INPUT knob – Counter clockwise to 0 setting
   OUTPUT knob – About position 7
   MONITOR knob – About position 7
   MONITOR switches – Depress for each channel to be recorded.
4. Start the input source connected to the LINE IN jacks or begin source to microphones for record level setting. Raise the INPUT knob setting until the VU meter reads about 0 VU for each channel. When "close miking" loud sources it may be necessary to set the INPUT selector to MIC ATT position to reduce microphone input level.
5. Depress REC and ▶ buttons on control panel to begin recording. Restart sound sources again if desired.
6. Set OUTPUT SELECT switch to PLAY to hear off-the-tape sound.
7. After the tape is recorded, rewind the tape to the beginning if you wish to play it back. If you want to keep the tape in storage we recommend that you play the tape to the end and keep it in this "tails out" condition.

Erasing

When any channel (track) is set in the record mode the erase head for that channel (track) supplies a high frequency AC signal which erases any previously recorded material. If no new signal is applied by the record head the tracks will remain erased. Any one or all tracks can be erased by setting each channel to record mode with no input record signal applied or with the INPUT knobs turned counter clockwise to 0. However, if a tape which was recorded on a half track or full track machine is to be used, that tape should be erased using a bulk eraser such as the TEAC E-2. The reason for this is that the recorded tracks on these tapes are not the same as those on a four track deck such as the A-3440 and therefore the tape would not be sufficiently erased when using normal recording procedures on the A-3440.

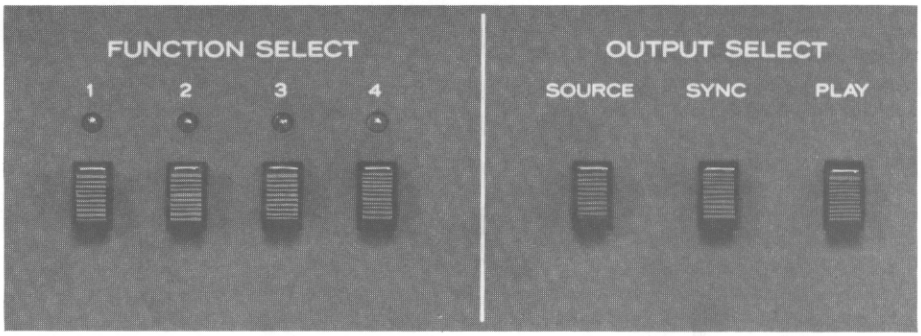


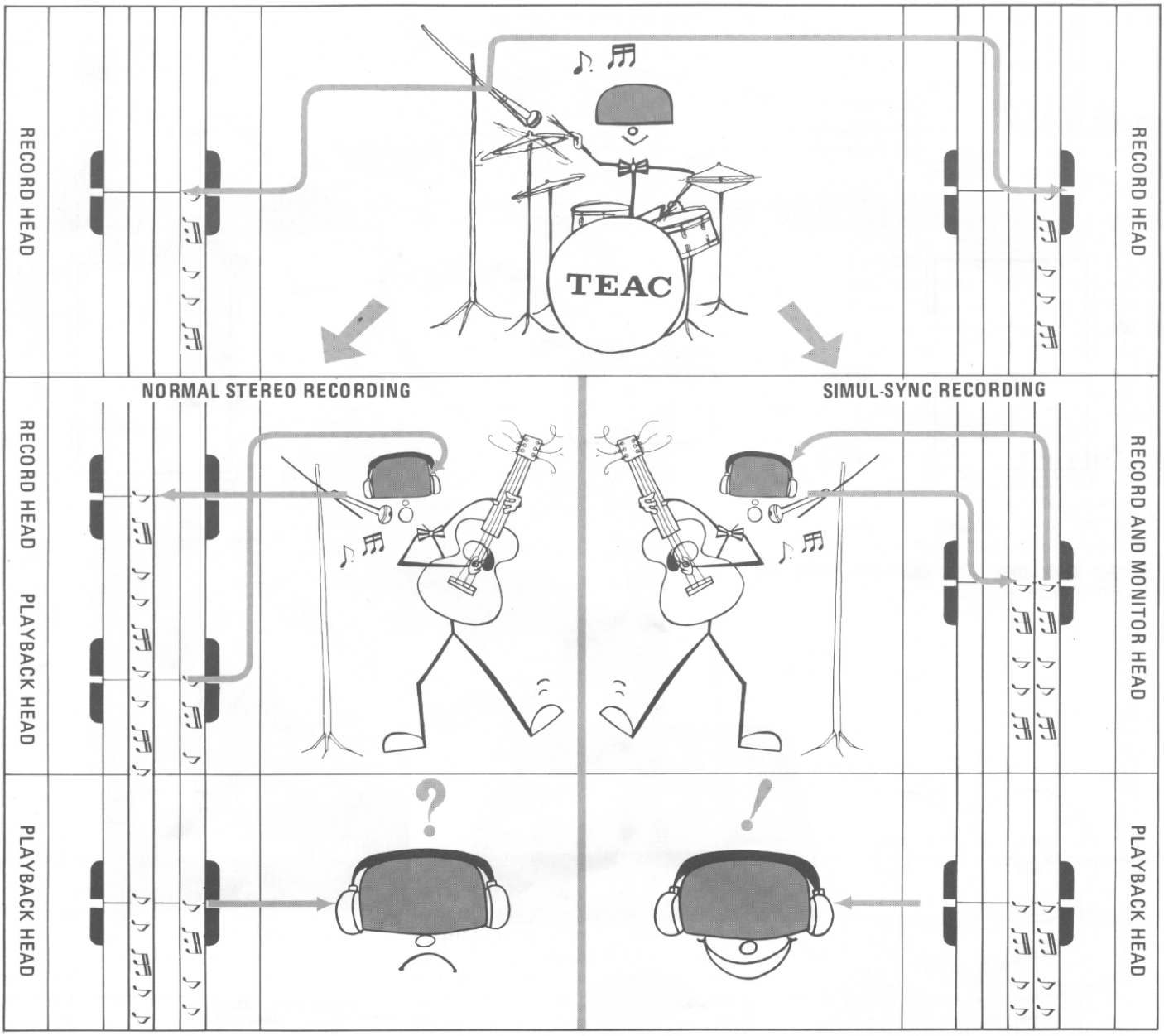
Creative Sound System



4-Track, 4-Channel SIMUL-SYNC Recording

Discrete, separate channels are recorded on each of the 4 tracks in the same direction and synchronized as in 2-channel stereo recordings. From a 4-channel source, the tracks are recorded simultaneously. With the SIMUL-SYNC function, they may be recorded separately and synchronized at the time of recording.

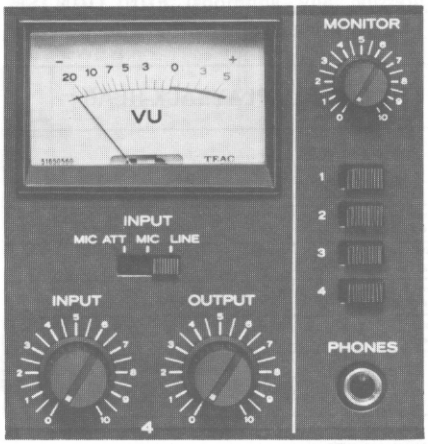




SIMUL-SYNC Recording Procedure

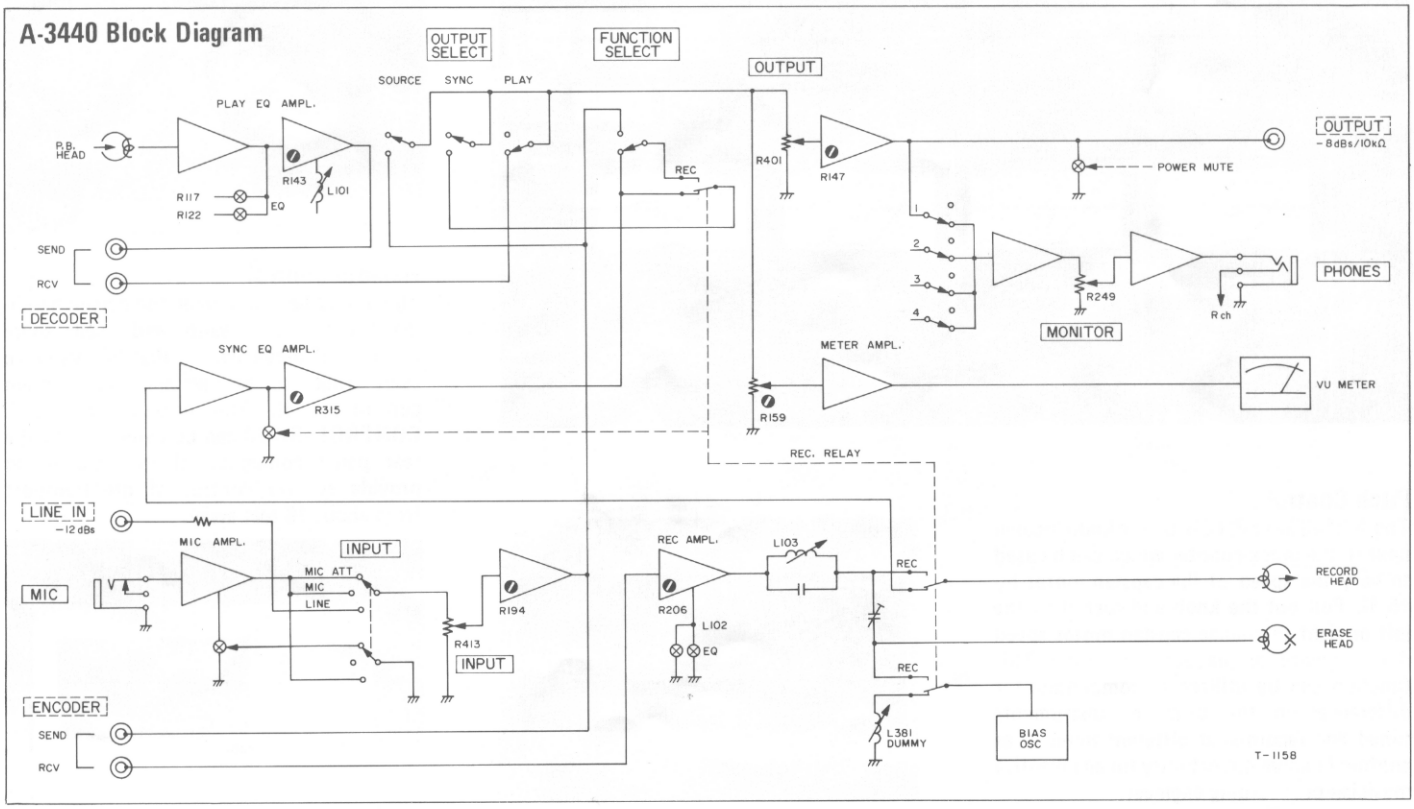
There are many ways to accomplish the mechanics of SIMUL-SYNC recording. Each sound engineer or even home recordist, with experience, will develop a certain style that suits him best. The basic procedure below may be helpful to those who are just getting into SIMUL-SYNC recording and haven't yet developed their own style and expertise. Run through it just for practice and familiarization with your A-3440. Once that's done you're on your way to setting your own style.

1. Let's assume you're starting from scratch. Make sure the tape is degaussed and that your deck is clean and the heads are demagnetized, etc. See maintenance hints on page 11.
2. Make the desired system connections as given in the connection diagram on page 10.
3. Set the switches and knobs as given below. Let's assume that you want to record your superlative rhythm guitar playing on tracks 1 and 3.
   FUNCTION SELECT – 1 and 3 depressd
   OUTPUT SELECT – SOURCE – to set record level and mic balance, then select PLAY.
   INPUT select (1 and 3) – MIC or MIC ATT
   INPUT knob (1 and 3) – Set to get required record level (usually about 0 VU)
   OUTPUT knob (1 and 3) – Set to about position 7
   MONITOR knob – Set to about position 7
   MONITOR selector – 1 and 3 depressed
   PITCH CONT – Depressed
   Index Counter – Reset to 0000
   PHONES jack – Connect headphones to PHONES jack



4. Depress REC and ▶ buttons to begin recording. It's usually a good idea to record a short count for a voice cue on the tape.
5. Begin playing your guitar. Right through to the end. No mistakes? Good. Let's keep these tracks. Stop the deck. Release FUNCTION SELECT switches 1 and 3. Rewind the tape back to the beginning.
6. Prepare the next instrument. Let's say you want to play your piano and record it on track 2. Set OUTPUT SELECT to SOURCE, depress FUNCTION SELECT 2, set INPUT selector to MIC or MIC ATT and set INPUT knob for desired recording level while you're playing a test piece.
7. Set OUTPUT SELECT to SYNC and MONITOR selector to track 1 or 3. Remember you want to get in sync with your guitar tracks so you have to listen to your voice count and begin playing at the right time.
8. Set the deck in record mode, listen to your voice count and begin playing right on cue. If you miss it you can go right back and try again over and over until you get it right.
9. Now you can fill in the last track, 4 in our example. With SIMUL-SYNC you can do it now, tomorrow or next week. If you're new at this type of recording you'll probably find that it takes a little practice to get it all together. Once you get the knack of it you'll find that it gets easier. And while you're practicing you'll probably be thankful for the chance to get as many tries at perfection as you need.

A-3440 Block Diagram



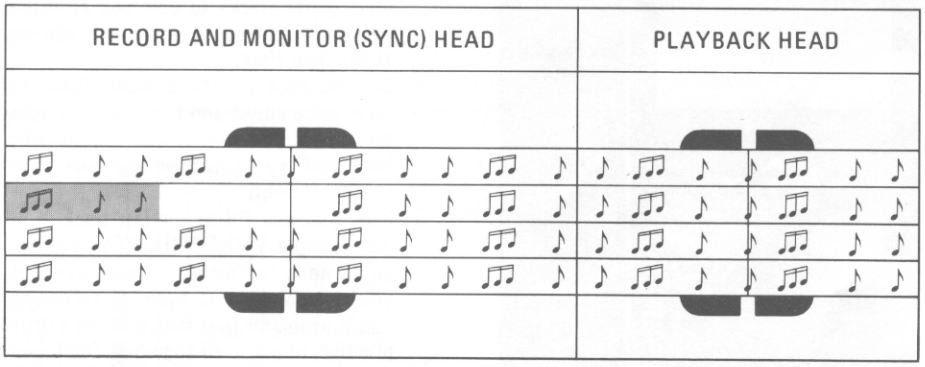
Punch in Recording

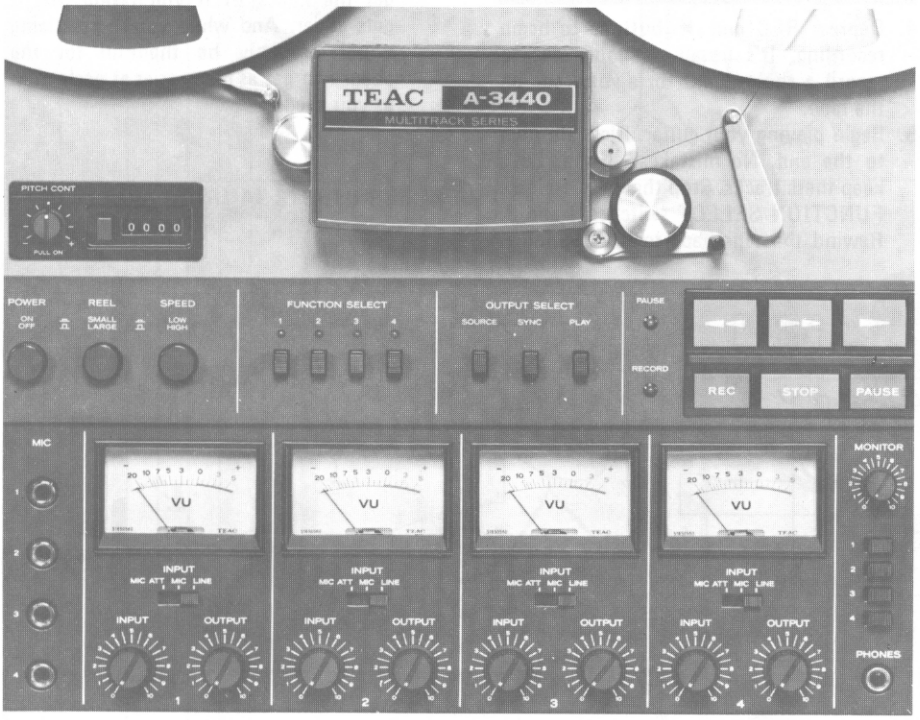
Punch in recording is used to correct a mistake or change part of a track. Let's assume that you want to improve a minute in the middle of the piano on track 2.

1. Set the OUTPUT SELECT switch to SYNC to monitor the sound on the tape using the Sync head.
2. Depress the MONITOR switch for the channels you want to listen to.
3. Depress the ▶ button to begin playback.
4. Now you can punch in on the channel you want by depressing and holding the record and ▶ buttons and then depressing the FUNCTION SELECT switch for the desired channel.
5. To punch out, release the function select switch. In this case the tape will continue to move but the deck will be in the play mode.
6. Another way to stop recording is to press the STOP or PAUSE button.

NOTE: When in the record mode with one FUNCTION SELECT switch depressed, depressing any additional FUNCTION SELECT switches will result in a loud pop or click being recorded on all tracks. Be careful, don't lose good tracks.

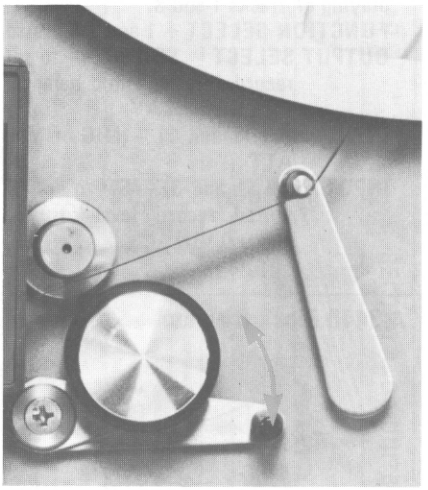
You'll probably find it takes a little practice to punch in to record on a rest or an open space of 1/2 second or more. The same applies for punching out of record. Punch in takes practice and patience to get it all together. Once you get the knack of it you'll find that it gets easier.





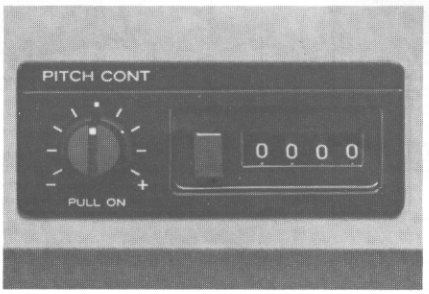
Cueing

The A-3440 has a Cue Lever located beneath the pinch roller which can be raised up to retract the tape lifters so that the tape will contact the heads. This allows high speed cueing during rewind or fast forward operation and manual cueing. The channels to be monitored can be selected by depressing the MONITOR selector switches. If the deck is connected to an amplifier and speaker system we suggest that you reduce the volume control on the amplifier to prevent sudden loud sounds from damaging your amplifier or speakers. Also be sure to release the Cue Lever when the cueing function is not being used in order to protect the heads from unnecessary wear.



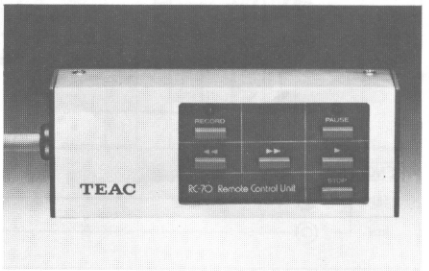
Pitch Control

The A-3440 has a PITCH CONT knob located next to the index counter which can be used to vary the speed of the capstan motor by ±5 %. Pull out the knob and turn it to the left or right to change capstan motor speed during record or playback operation. This function can be utilized to compensate for differences in the pitch of instruments tuned and recorded at different times or as another creative opportunity for an inventive musician or recording engineer.

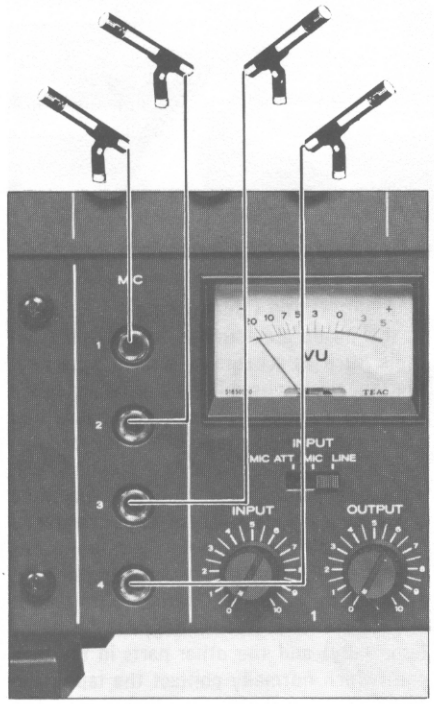


Remote Control

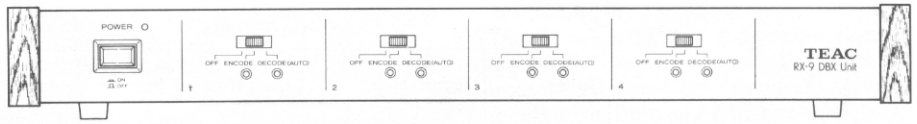
There may be times when the person handling the recorder wants and needs some freedom of movement so that he can move away from the recorder and still maintain control of it. The optional REMOTE CONTROL RC-70 can be connected to the rear panel connector of the A-3440 to provide remote control of the transport from about 16 feet away.

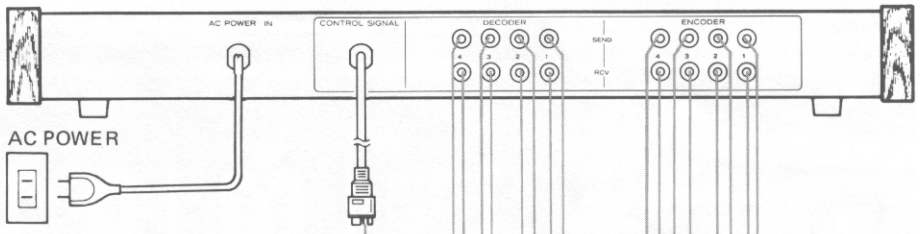


System Connections

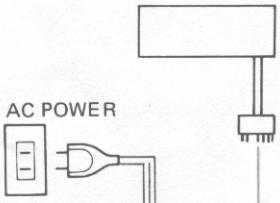


RX-9

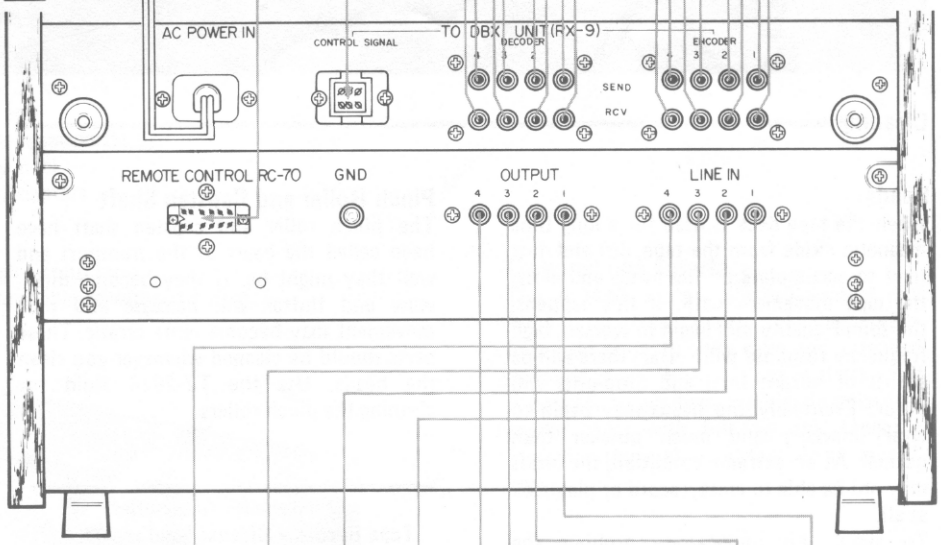




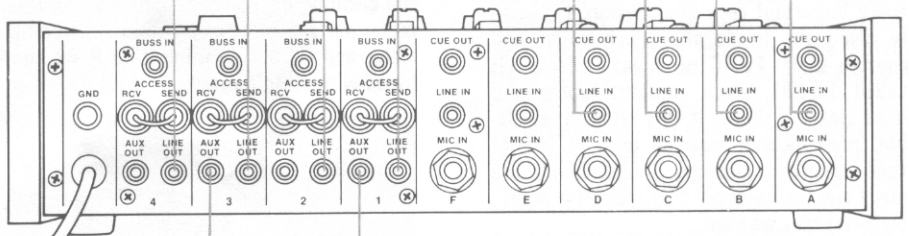
RC-70

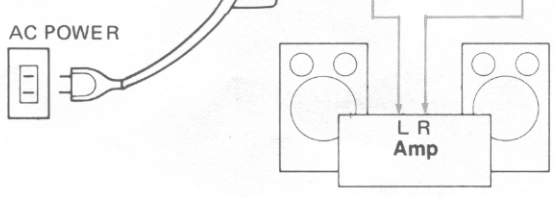


A-3440

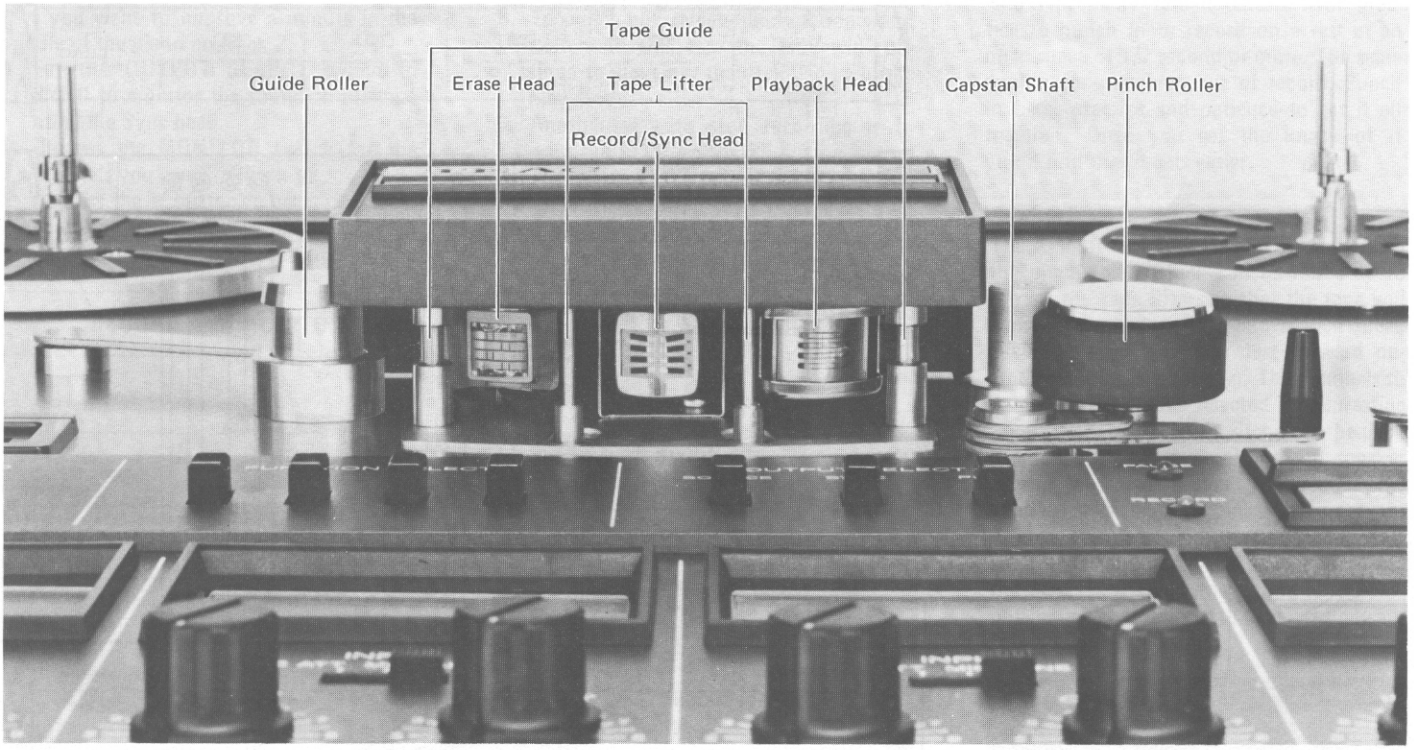


M-2A





Maintenance



Cleaning

Heads

When the tape deck is used for a long time magnetic oxide from the tape, dirt and dust tend to accumulate on the heads and along the tape movement path. If this happens, the sound quality will begin to worsen, high frequency response will suffer, there will be a loss of output level and drop-outs will occur. Eventually the heads may begin to wear unevenly and much quicker than normal. At an extreme condition, the heads may not be able to erase, record or playback at all.

To avoid this unnecessary problem the heads and tape path must be cleaned regularly, at least after about every 8 hours of record or playback operations and before every important recording session. Especially clean the heads and pinch roller and capstan shaft. TEAC produces a special kit called TZ-261 which contains rubber and head cleaning fluids. If this kit is not available, pure alcohol may be used or similar type recorder cleaning fluids which are made and recommended by reputable manufacturers may be used.

Pinch Roller and Capstan Shaft

The pinch roller and capstan shaft have been called the heart of the transport and well they might be. If they become dirty, wow and flutter will increase and tape movement may become more erratic. These parts should be cleaned whenever you clean the heads. Use the TZ-261B fluid for cleaning the pinch rollers.

Maintenance Accessories
Tape Recorder Cleaner (sold separately)
TZ-261

The sound quality is strongly influenced by the cleaning of the heads, capstan and other metal parts. Head cleaner fluid A and pinch roller and rubber cleaning fluid B are combined with cleaning sticks in this kit.

Demagnetizing (Degaussing)

If the heads are touched with magnetized tools, such as scissors or screwdrivers or if the tape deck is used in play or record mode for long periods of time, the heads and other parts in the tape path may become magnetized. This residual magnetism will introduce noise onto your pre-recorded tapes, cause a decrease in high frequency response and may begin to cause erasure of tapes even during playback operation. To avoid such problems, periodically (about once every two weeks) degauss the heads (especially) and the other parts in the tape path which normally contact the tape (tape guides, capstan shafts, tape lifters, etc.) The TEAC E-1 Head Eraser or similar eraser can be used to remove this harmful residual magnetism.

1. Switch off power to the tape deck.
2. Turn on power to the head eraser and move the tip of it very close to the head or part to be degaussed. Move the tip back and forth slowly across the head or part about 4 or 5 times.
3. After slowly moving to each part and degaussing them as explained in step 2, slowly move the eraser at least 30 centimeters or more away from the deck and then turn off power to the eraser.

Specifications

SPECIFICATIONS

Track System	: 4-Channel Multi-Track SIMUL-SYNC
3 Motors	: 1 DC-Servo Capstan Motor, 2 Eddy Current Induction Reel Motors
3 Heads	: Erase, Record/Sync and Playback
Reel Size	: 10-1/2" and 7"
Tape Speed	: 15 ips and 7-1/2 ips (±0.5 %)
Wow and Flutter (NAB Weighted)	: 0.04 % at 15 ips, 0.06 % at 7-1/2 ips
Frequency Response (overall)	: 25 – 24 000 Hz (± 3 dB/0 VU: 40 – 22 000 Hz) at 15 ips 25 – 22 000 Hz (± 3 dB/–10 VU: 40 – 20 000 Hz) at 7-1/2 ips
Signal-to-Noise Ratio (overall)	: 55 dB (3 % THD level, weighted)
Harmonic Distortion (overall)	: 0.8 % at normal operating level
Stereo Channel Separation	: 45 dB at 1 kHz
Rewind/Fast Forward Time	: 140 seconds for 1 800 feet
Inputs	: 4 Line: 60 mV/50k ohms 4 Mic: 0.25 mV (–72 dB)/600 ohms or more
Outputs	: 4 Line: 0.3 V/load impedance: 10 k ohms or more 1 Headphone Jack: 8 ohms
Power Requirement	: 100/117/220/240 V AC, 50/60 Hz (EX model) 220 V AC, 50 Hz (EUR model) 240 V AC, 50 Hz (UK/AUS model) 117 V AC, 60 Hz (USA/CND model)
Power Consumption	: 125 W
Dimensions (W x H x D)	: 445 x 523 x 235 mm (17-1/2" x 20-1/2" x 9-1/4")
Weight	: 25 kg (55 lbs) net
Supplied Accessories	: Input-Output Connection Cords RE-1002 Empty Reel NAB Reel Hub Adapters Splicing Tape

*Specifications were determined using low-noise/high-output tape.
*Improvements may result in features or specifications change without notice.

Service Note

The TEAC A-3440 is a precision electro-mechanical device that will give years of trouble-free operation. However, if you should experience any problems first check for the most obvious causes such as poor connections, improper switch settings, etc. Often, just changing to a different or better quality tape will solve problems that appear to be a fault in the deck. Make sure the heads and tape path are cleaned and demagnetized regularly, especially prior to important recording or playback sessions. Familiarize yourself with the correct operation of the controls and the effect each has on the operation of the deck as explained in this manual.

If a trouble still exists after you check all these things, you may want to phone or write to a TEAC office or Service Center prior to bringing or sending your deck in for service. Also, please read through the instructions given on your Warranty Card for proper procedure in obtaining Warranty accommodation.

Optional dbx Interface

The A-3440 accepts the professional dbx Type-I interface, which provides greatly improved signal-to-noise ratio and extended dynamic range. With this optional system it is possible to produce completely noise-free master tapes with full dynamic range: a must for those all-important demo recordings.

Useful Accessories

For the perfect creative recording system, team the A-3440 up with the Model 2A six-in/four-out audio mixer and the MB-20 Meter Bridge. The Model 2A gives you six microphone or line inputs with independent equalization, output channel assignment and pan pots. The MB-20 provides accurate readout of buss and tape output levels, and has a built in headphone monitor amp with independent volume control and a left, right or center channel monitor switching matrix. The A-3440, Model 2A and MB-20 form a total studio system with which your musical ideas can become a sonic reality.

To assure top performance from your deck at all times, keep it physically and magnetically clean with the TZ-261 Cleaner Kit and E-1 Head Demagnetizer.

A-3440 4-Channel Multitrack Tape Deck with SIMUL-SYNC

TEAC®
First. Because they last.

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