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OWNER'S MANUAL



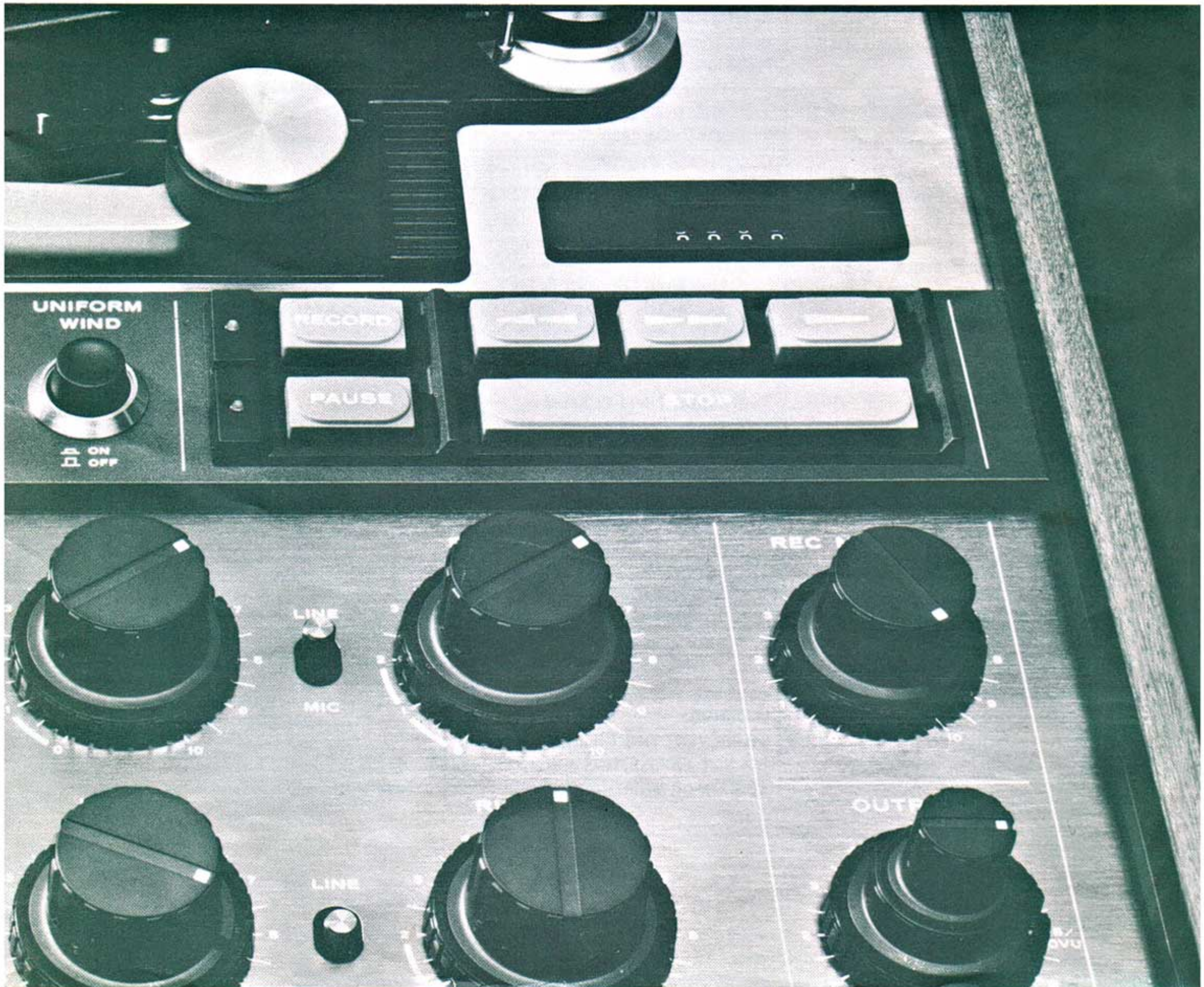
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TEAC[®]

A-7300

Stereo Tape Deck

51012500



Introduction

This manual is written for both the TEAC A-7300 (four track, two channel) and the TEAC A-7300-2T (two track, two channel). Except for a few specific differences, which are noted when they occur, everything in this manual is applicable to both models. We suggest you go first to the large center page for a brief description of the operating controls and special features of this tape deck. Try each of the controls and become familiar with this deck's operation and

capabilities. Depending on your experience and background, you may find that the single large page contains all of the information you need to begin enjoying this superb tape deck. Of course, much more data is also included in this manual to give our customers a complete understanding of the special features, procedures and characteristics of their new deck.

TEAC makes a variety of tape decks to suit the needs of our customers. Much of the

required information pertains to all TEAC open reel tape decks. For your convenience, we've separated this general information and included it in the Information Supplement. Please look through the contents of both the Owner's Manual and the Information Supplement, note the valuable data contained in each and enjoy the full pleasure and creativity of your high quality TEAC tape deck.

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

Features and Specifications.

A-7300 Features

Direct Drive DC Capstan Motor for amazingly accurate tape speed control and minimum wow and flutter.

Eddy Current Induction Reel Motors for high efficiency and accurate tape tensioning.

Built-in mixer allows you to blend signals from 4 Mics, or 4 lines, or 2 MIC and 2 LINE Inputs. For live recording no external mixer is needed.

Tape/Source and Tape Only Outputs for added versatility and convenience; especially useful for creation of special effects such as echo, cross echo, and Sound on Sound.

EDIT Switch (on A-7300 2T only) allows you to edit out unwanted sections or tape by deactivating the take up reel motor.

Separate Cue and Pause controls- These permit cueing to a precise musical passage in either wind mode or play mode.

Separate Master Input level Control for all mic/line inputs.

Pitch Control Knob for precise tonal mixing with another source. Use for pitch synchronization when playing an instrument or singing along with the recorder or when blending two separately recorded music or other sound sources.

Dual Scale VU meter with range selector switch.

Separate 3-position Bias and EQ switches for using new hi-fi or standard tapes.

Pause control with indicator light.

"Memory Markers" on level controls remind you of previous settings to facilitate returning to them.

Flip-up head housing for easy cleaning and head maintenance.

Total remote control capability.

Push button transport control with IC logic circuitry for feather light operation.

Also many others.

SPECIFICATIONS	A-7300	A7300-2T
Track System	4 track, 2 channel stereo or mono	2 track, 2 channel stereo or mono
Heads	Three : erase, record and playback	
Reel size	10-1/2" and 7"	
Tape Speed	7-1/2 ips and 3-3/4 ips	15 ips and 7-1/2 ips
Motors	1 direct drive DC servo capstan motor 2 eddy current induction reel motors	— —
Wow and Flutter (NAB weighted)	0.05% at 7-1/2 ips 0.08% at 3-3/4 ips	0.04% at 15 ips 0.05% at 7-1/2 ips
Frequency Response (overall)	25-28000 Hz (± 3 dB, 40-24,000 Hz) at 7-1/2 ips 25-20,000 Hz (± 3 dB, 40-16,000 Hz) at 3-3/4 ips	25-30,000 Hz (± 3 dB, 30-28,000 Hz) at 15 ips 25-28,000 Hz (± 3 dB, 30-24,000 Hz) at 7-1/2 ips
Signal to noise ratio (overall)	60 dB	—
Harmonic distortion (overall)	0.8% at 1,000 Hz normal operating level	—
Stereo channel separation	50 dB at 1,000 Hz	—
Fast winding time	150 seconds for 1,800 feet	—
Linear countre accuracy	N/A	better than $\pm 1.5\%$ (15 ips play mode)
Inputs	Line: 0.1 V, 50,000 ohms Microphone: 0.25 mV/-72 dB (600 ohms or more)	— —
Outputs	Line: 0.775 V for load impedance of 10,000 ohms or more Headphones: 8 ohms	— —
Power requirements	117 VAC, 60 Hz 80 W.	—
Dimensions	21-5/8"(H) x 17-3/8"(W) x 9-3/4"(D) [548 (H) x 440 (W) x 246 (D) mm]	—
Weight	62 lbs (28 kg) net	—

Standard Accessories

Empty reel (10-1/2 RE-1002), Silicone cloth
Reel clampers,
Input-output connection cord, Splicing tape
Fuse Cleaning stick applicator.

* Specifications were determined using low noise high output tape.

* Improvements may result in specifications or features change without notice.

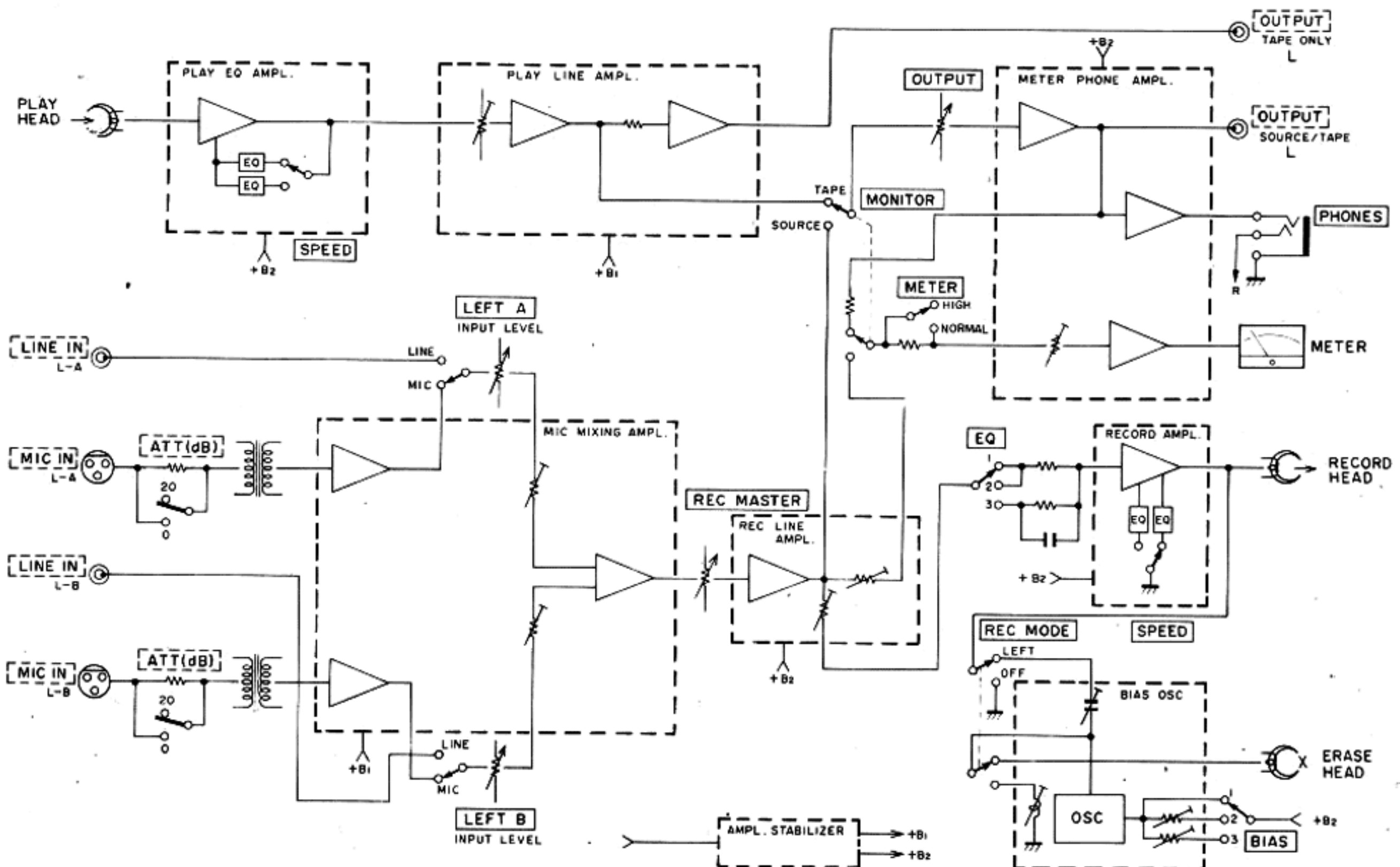
Stereo Playback Procedure and A-7300 Block Diagram.

STEREO TAPE PLAYBACK PROCEDURE


Before proceeding verify all connections and prepare the Receiver/Amplifier for tape play back. All deck controls not specifically mentioned in this procedure have no affect during playback operation.

SWITCH OR FUNCTION	POSITION OR SETTING	NOTES
Load the pre-recorded tape		
Tape SPEED selector Switch	To match speed at which tape was recorded. HIGH (7-1/2 ips) or LOW (3-3/4 ips) on the	On the A-7300 2T, HIGH speed is 15 ips and LOW speed is 7-1/2 ips.
REEL Size selector	To match size of reels being used	Selects proper tape tension, Be sure to use two reels that are the same size and both made of the same material.
METER range switch	NORMAL position	For tapes which were recorded at a high record level the HIGH meter range may be used.
MONITOR switch	Tape	
OUTPUT Level Controls	#8 0 VU position	
PITCH CONT	OFF	If ON the playback pitch of sounds can be varied by turning the dial.
UNIFORM WIND (on 7300) or EDIT (on 7300 2T)	OFF	
REC Mode switches L and R	OFF	Will prevent accidental erasure of tape
POWER to deck and other components	ON	
PLAY button	Depress to start playback	
STEREO AMPLIFIER Volume control	Adjust for desired listening level	Control is on amplifier, not on the deck
		SHUT-OFF ARM will stop transport when the tape runs off the reel. When using four track tapes on the 7300 interchange reels and play reverse side of the tape.

A-7300 Block Diagram.



Basic Stereo Recording Procedures

SWITCH or FUNCTION	POSITION or SETTING	NOTES
Load Blank tape		See threading chart on p. 7.
Tape SPEED switch	as desired	Higher speed normally gives slightly better high frequency response
REEL size selector	to match the size of reels being used	Always use two reels of the same diameter and material
EQ and BIAS switches	consult BIAS/EQ chart on p. 8	
RECORD Mode switches L and R	Both "ON" for stereo recording	With RECORD switch "OFF", the ERASE and RECORD heads for the affected channel is disabled which allows many special recording techniques to be used as well as provides insurance against accidental erasure of your tape.
METER range selector	NORMAL	For special high level recording set the switch to the HIGH position for +6 VU maximum full scale reading
MONITOR switch	SOURCE	Allows monitoring of INPUT signal
LINE/MIC selector switches	as desired for MIC or LINE input	8 inputs (4 MIC and 4 LINE) can be connected at the same time. This switch selects which of these pairs of inputs will be recorded.
PITCH CONTROL	OFF (released)	If this switch is ON (pulled out) the capstan motor speed can be varied $\pm 5\%$ by turning the switch knob
UNIFORM WIND (on 7300 only) or EDIT button (on 7300 2T only)	OFF OFF	
MIC/LINE INPUT CONTROL	Minimum	
RECORD MASTER control	position #7	
MIC ATT (on rear connector panel)	"0" unless MIC INPUT level is too high	Only controls MIC inputs
OUTPUT controls	#8 0 VU position	
AC POWER switch	ON	
Source material	begin playing	
MIC/LINE INPUT level control	0 VU for highest level signal	
RECORD and PLAY  buttons	depress both together	Or RECORD and PAUSE then PLAY
MONITOR switch	TAPE	For off-the-tape signal monitoring

High Level Recording

While 0 VU is the generally accepted meter reference setting, most of today's improved tapes will accept higher levels. For an expanded signal-to-noise ratio, you may wish to set the METER range switch to HIGH and use +3 or +4 VU as your limit if using improved types of tape ("Low Noise, High Output", etc.)

Recording from Synthesizers and Electronic Organs

Electronically-generated tones are much stronger at high frequencies than conventional musical instrument intensity levels. High-level recording should be avoided or carefully monitored for distortion when using electronic audio sources.

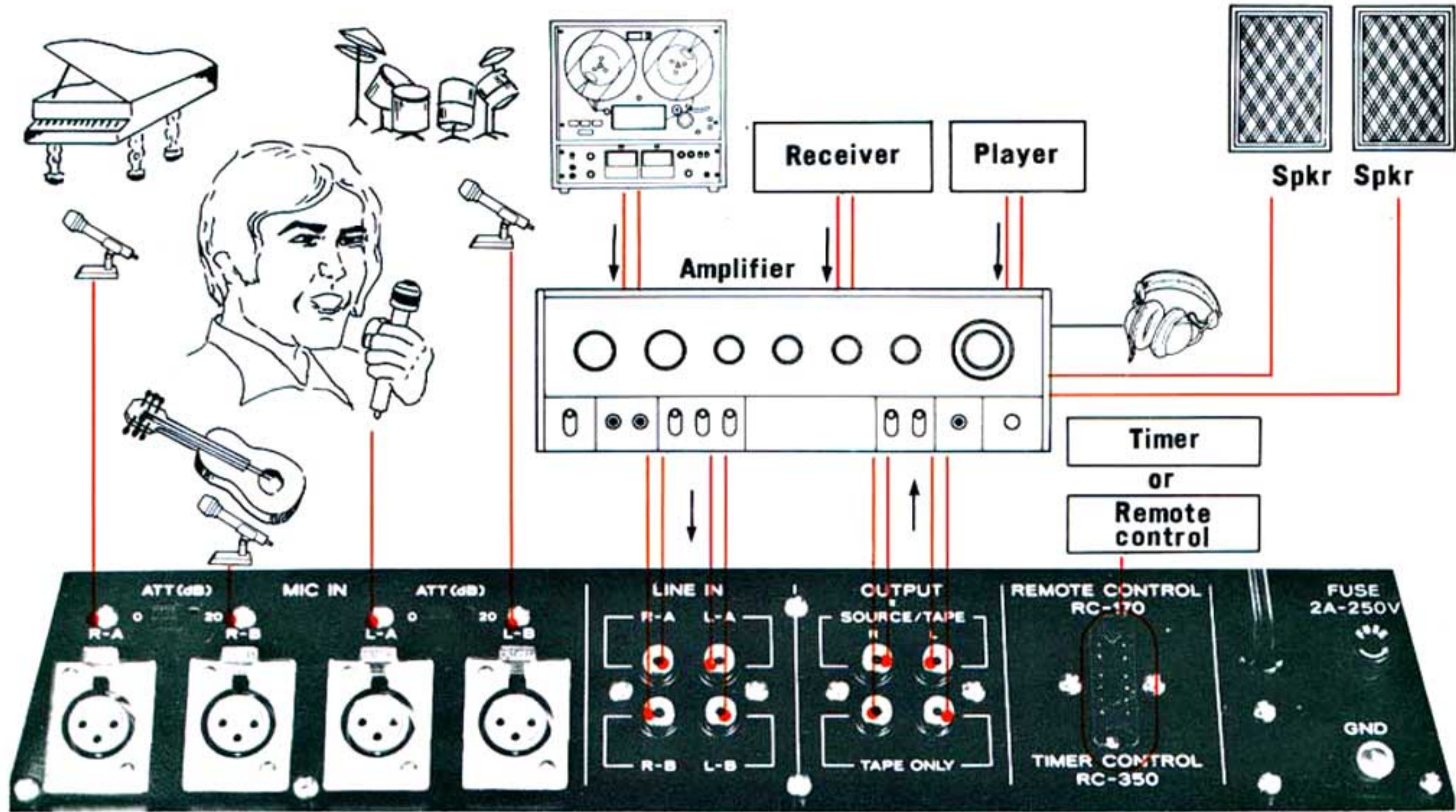
ATT Switches and Microphone Recording Levels

Microphone sources are much more susceptible to overload distortion than line sources because of the tremendous dynamic range they offer. These inputs may thus be attenuated as needed to prevent top-end clipping or distortion and to maintain accurate control of the input level.

Attenuation is required if the Input Level control setting reads below #2 on the scale around the knobs. A band is imprinted on that part of the scale to remind you to switch in the attenuation. The 20dB cut will then bring the setting back up around the center of the scale to provide more sensitive control of the input.

Pitch Control

The PITCH CONTROL, which can vary the capstan motor speed by approximately $\pm 8\%$, can be used for several functions. It is great for matching tape speed variations between tapes recorded on one deck and played back on another or for compensating for pitch variations of musical instruments tuned to different frequencies and recorded at different times. But, the PITCH CONTROL also offers an interesting creative possibility. Try slowing down a recorded speech or song to a more pleasant speed or change the frequency of sounds or voices for special (or humorous) effects. Make high pitched voices lower or low pitched voices higher. Slow down the recording speed and increase the playback speed (or vice versa) for even greater variations.



MIC Inputs
The A-7300 and A-7300-2T were designed for use with professional CANNON-type microphone input jacks, having X1R-3-12C connectors. Microphones which are otherwise suitable, except for their connectors, may be converted to the CANNON type connectors by using the following procedures. For MICs with 2 conductor shielded cable: A. Connect shield to connector pin #1. B. Connect the low or neutral wire to pin #2. C. Connect the high or active wire to pin #3. For MICs with single conductor shielded cable: A. Connect the single wire to pin #3. B. Connect the shield to pins #1 and 2. When using MIC inputs, be sure the MIC/LINE Input selector switch(es) are in MIC position. (Front Control Panel)

MIC ATT - Allows you to select either 0 dB or 20 dB attenuation of MIC input signal. Note that each ATT switch affects 2 channels.

FLIP-OPEN HEAD HOUSING - The flip-open head housing allows convenient access to the tape right under the head for easy tape editing. It also makes head cleaning and maintenance easier and more efficient to prolong head life and overall deck efficiency.

LINE IN - The LINE IN Jacks are rated at 50k ohms and require 0.1 volt minimum input level for 0 VU at the VU meters. The jack designations such as R-A, R-B correspond to the INPUT level control dials on the front control panel.

OUTPUT SOURCE/TAPE - These outputs are similar to conventional outputs in that they are affected by the OUTPUT Level controls and the MONITOR switch selection. If the OUTPUT level controls are set to #8 (0 VU), the OUTPUT level should be identical with the TAPE ONLY jacks.

OUTPUT - TAPE ONLY - These jacks are fed a signal directly from the tape which is completely independent of the OUTPUT control setting and the MONITOR switch position. This signal depends only on the recorded level on the tape. This output is normally used with special accessories which require a known, specified signal level.

HEAD ASSEMBLY - The A-7300 deck has 4-track, 2-channel heads. The A-7300 2T Master Tape Deck has 2-track, 2 channel heads.

DIRECT DRIVE CAPSTAN - The capstan is the capstan drive motor shaft. This direct coupling system eliminates gears, idlers and belts that often cause noise, excess wow and flutter and tape speed variations. The direct current (DC) motor that drives the capstan is quiet, accurate and unaffected by variations in the power line frequency.

AC Power Cord and FUSE Receptacle - **Caution:** Do not connect this deck to an AC outlet unless the voltage indicated on the plate on the rear of the deck matches your local power. **Note:** Disconnect the AC power cord before attempting fuse replacement. Fuse required is 2 amperes. Do not use a larger rating nor a "slo-blow" type.

Ground Terminal - Connect this ground to the system ground or to the ground terminal of the amplifier or receiver you are using.

REMOTE CONTROL UNIT Connector - The RC-170 Remote Control Adapter can be connected to this socket to provide remote control from up to 15 feet away. Consult the instruction manual supplied with the RC-170 for information on how to connect and how to operate the Remote Control Adapter.

POWER SWITCH - When turned ON, power is supplied to the deck. The lights on the VU meters will go on to show that power is ON and power is going to the amplifier and shut-off switch. If tape is properly threaded holding the arm in place, power will be supplied to the transport electronics. Note that PAUSE lamp starts flashing and no transport function will start until lamp goes out after about 4 seconds. This insures accurate speed from the start of the recording.

REEL SIZE SELECTOR - Either of two different sizes of tape reels can be used with this deck, the LARGE size 10-1/2" reel or the SMALL 7" reel. Set this switch to select the proper tape tension and motor torque to match the size of reels you will use.

PHONES JACK - Use 8-ohm stereo headphones (such as the TEAC HP-103 Dynamic Headphones) to monitor either the SOURCE input signal or the off-the-tape signal. Use the MONITOR switch to select the signal you wish to hear.

TAPE TENSION ARM - Acts mechanically to maintain proper tension and guides the tape; also quickly takes up slack during stop and start operations.

SPEED CONTROL SWITCH - Selects one of two speeds available on your deck. On the TEAC A-7300 2T Master Deck HIGH speed is 15 ips, LOW is 7-1/2 ips. On the TEAC A-7300 4T deck HIGH speed is 7-1/2 ips, LOW speed is 3-3/4 ips.

CUE LEVER - Push lever up during FAST FORWARD or FAST REWIND to allow tape to contact the playback head for quickly locating recorded sections on the tape. Listen for the squawk at the headphone output. Be sure to reduce the OUTPUT level control prior to high speed cueing to avoid a sudden loud signal that could overdrive your amplifier or internal circuitry.

RECORD - BIAS and EQ Switches
Recording Bias and Equalization are factory aligned to obtain the best possible performance from the tape. As you may choose your tape from among the three basic types of tape formulation, the A-7300 provides three positions for each switch to accommodate the differences between tape types. Typically, the highest bias is applied at the #1 position. These switches must be set according to the chart below to match the type of tape before every recording session; improper settings may result in inferior performance. During playback, these switches have no effect and may be disregarded. The tapes listed here are recommended for use with the A-7300 and A-7300-2T for maximum performance characteristics. Your dealer may be able to offer suggestions. Factory alignment is sufficiently universal so that non-critical recording performance will be generally satisfactory with almost any good tape using the proper switch selections.

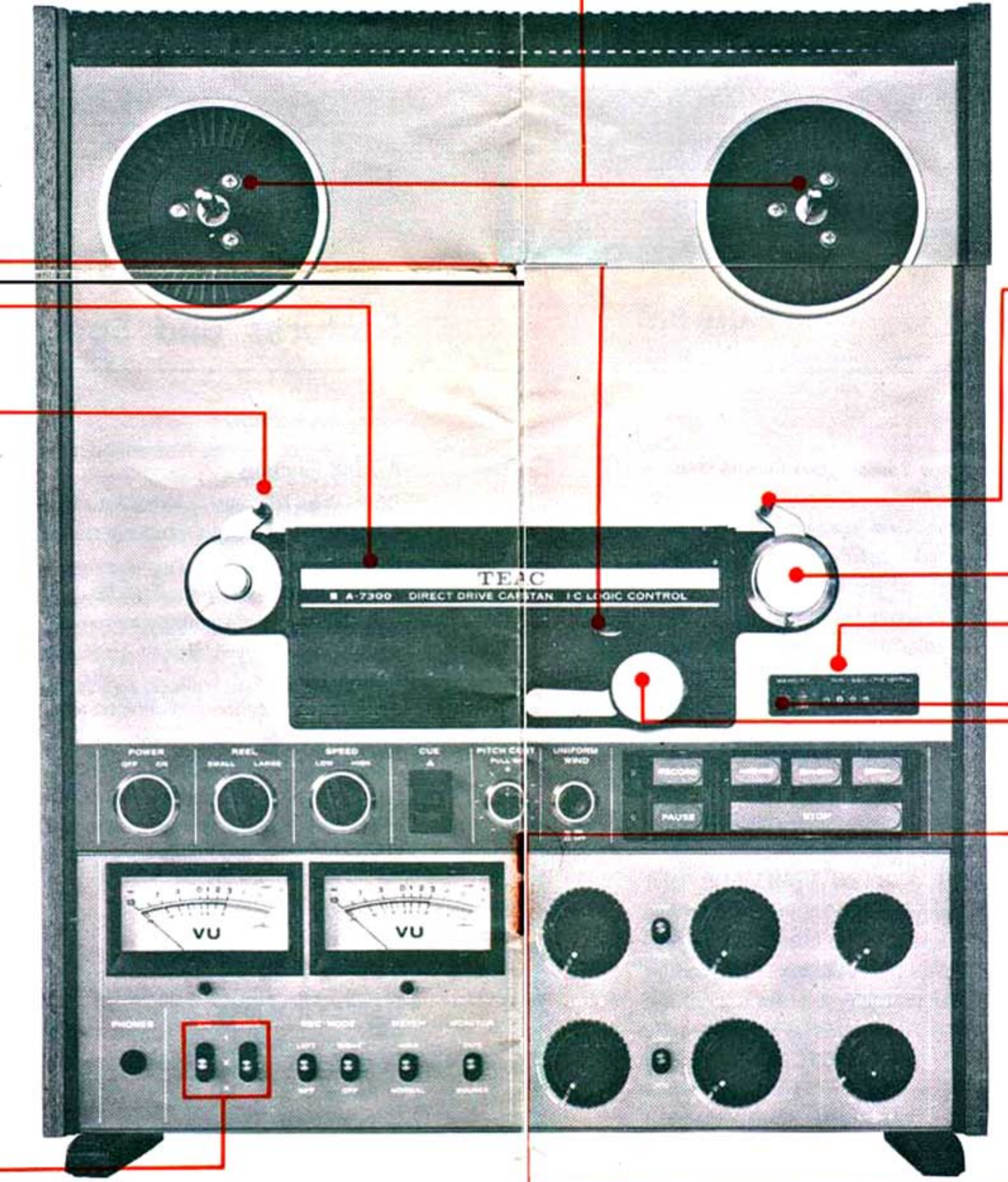
RECORD MODE Switches
The L and R MODE switches select which channels will be recorded. Both must be ON for stereo recording. Select the desired channel, Left or Right only, for mono-phonetic recording. Both switches should be OFF during Playback to prevent accidental erasure of your valued tapes.

METER Range Switch and Dual-level Meters - Most improved types of tapes are capable of recording levels around +3 VU without noticeable tape saturation distortion. To accommodate these higher input signal levels accurately on the VU meters, switch the METER range switch to HIGH and use the meters' upper scale. Readings of up to +6 VU can then be displayed. Such high-level recording requires consideration of both the tape and the type of audio source.

Monitor Selector Switch - In SOURCE position this switch allows you to hear the input source signal at PHONES jack and to read input level on VU meters for accurate adjustment of the Record Level even without engaging the Record or Record/Pause mode. In TAPE position the off-the-tape sound is heard to provide a reliable check of the sound that is actually recorded on the tape.

Recommended BIAS and EQ switch settings for various types of tape

1 mil base tape (recommended for 2-track or 4-track decks)				1-1/2 mil base tape (recommended for 2-track decks only)			
Brand	Type or model	BIAS	EQ	Brand	Type or model	BIAS	EQ
MAXELL	UD-35	1	1	MAXELL	UD-50	1	1
FUJI-FILM	FG-150	1	1	SONY	SHL-11-740B	1	1
SONY	SHL series	1	1	SCOTCH	211	1	1
TDK	AUDUA series	1	1	BASF	SPR-50LH	2	2
FUJI-FILM	FB-151	2	2	MEMOREX	1200	2	2
BASF	LRP or LP-35LH	2	2	FUJI FILM	FB-101	2	2
MEMOREX	1800	2	2	SCOTCH	111 or its Equivalent	3	3
FUJI-FILM	FM-150	3	3	SCOTCH	206	1	3
SCOTCH	150 or its equivalent	3	3	AGFA-GEVAERT	PER-525 or PER-555	1	3
SCOTCH	207	1	3	BASF	LGR-30	1	3
AGFA-GEVAERT	PE-36	1	3				



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SHUT-OFF ARM - Automatically de-energizes the pinch roller when the tape breaks or runs off one or the reels. Tape should be properly threaded per threading chart to hold this arm in position to apply power to the transport.

DRIVE ROLLER - Unique positive contact drive roller especially designed to give non-slip indication of tape passing over it during normal Record and Playback operation, for accurate control of Linear Counter.

LINEAR COUNTER - This counter is unusually accurate because it is controlled by a special drive roller which has a unique cork-like coating that virtually eliminates slippage. The tape passing over the drive roller is "measured" by the rotation of the roller and the information is relayed to the Linear Counter. During normal drive operations or winding the relative position of tape is truly indicated on the Linear Counter. (On the A-7300-2T deck this counter indicates the elapsed record or play time at 15 ips in minutes and seconds. For 7-1/2 ips speed multiply the indicated time by 2 for the actual elapsed time.)

MEMORY REWIND - (On the A-7300-2T only) Depress this button to automatically stop tape during Rewind when the Linear Counter passes 0000.

Pinch Roller - Large diameter "2 step" Pinch Roller is solenoid activated to give smooth, quick starts.

UNIFORM WIND - (on A-7300 4T Deck only) Provides capstan-controlled winding of tapes to insure tape is evenly and smoothly wound for tape storage. With deck in normal play mode, depress UNIFORM WIND button. Tape speed will increase and tape lifters move the tape away from the head to afford smoother tape movement and to prolong head life.

EDIT BUTTON (on A-7300-2T only) - When depressed, deactivates the right reel (take-up) motor. Then, when the forward play button is depressed, the left reel motor begins "dumping" tape until the STOP button is depressed. Note the following precautions: 1. Cut the tape at the selected point before engaging the EDIT facility. 2. Always release the EDIT button as soon as you finish the editing operation. Splice the tape ends, then check this button again before resuming other modes. 3. Automatic end-of-tape shut-off does not function when EDIT is engaged.

PITCH CONTROL - Varies speed of Capstan Motor approximately ±5%. Pull knob out and turn it to control motor speed. Knob has no control of motor when it is not pulled out.

MASTER INPUT LEVEL CONTROL - Allows single dial control of all MIC and LINE Inputs. Dial has "snap-stop" at "0 VU" reference level and Memory Marker Guide Ring.

RECORDING LEVEL CONTROLS - 4 dials allow individual control of all MIC and LINE inputs. Use in conjunction with MIC/LINE Selector switches for professional mixing. Memory Marker Guide Rings (with "snap-stop") allow accurate return to preset reference levels for smooth fade-in and fade-out techniques.

MIC/LINE INPUT SELECTOR SWITCHES - A toggle switch selects MIC or LINE inputs for each pair of channels (A- L and R, B- L and R). 8 inputs may be connected at the same time (4 MIC + 4 LINE). These switches control which pairs are actually recorded.

OUTPUT LEVEL CONTROL - A dual concentric control that allows individual or simultaneous adjustment of both OUTPUT channels. Individual adjustment is done by merely holding one knob while turning the other. Smooth friction coupling insures easy simultaneous operation. A Memory Marker with a "snap-stop" at 0 VU is also provided for quick return to the preset level.

Controls and Functions

"QUIK-LOK" Reel holders
Always secure these reel holders before operating the deck to assure adequate, solid support for the tape reels. Install the (supplied) adapters to the reel table (see below) before mounting 10-1/2" reels on the reel tables. Follow the procedures below for mounting 7" reels or the adapters onto the deck. Numbers given refer to the illustration.

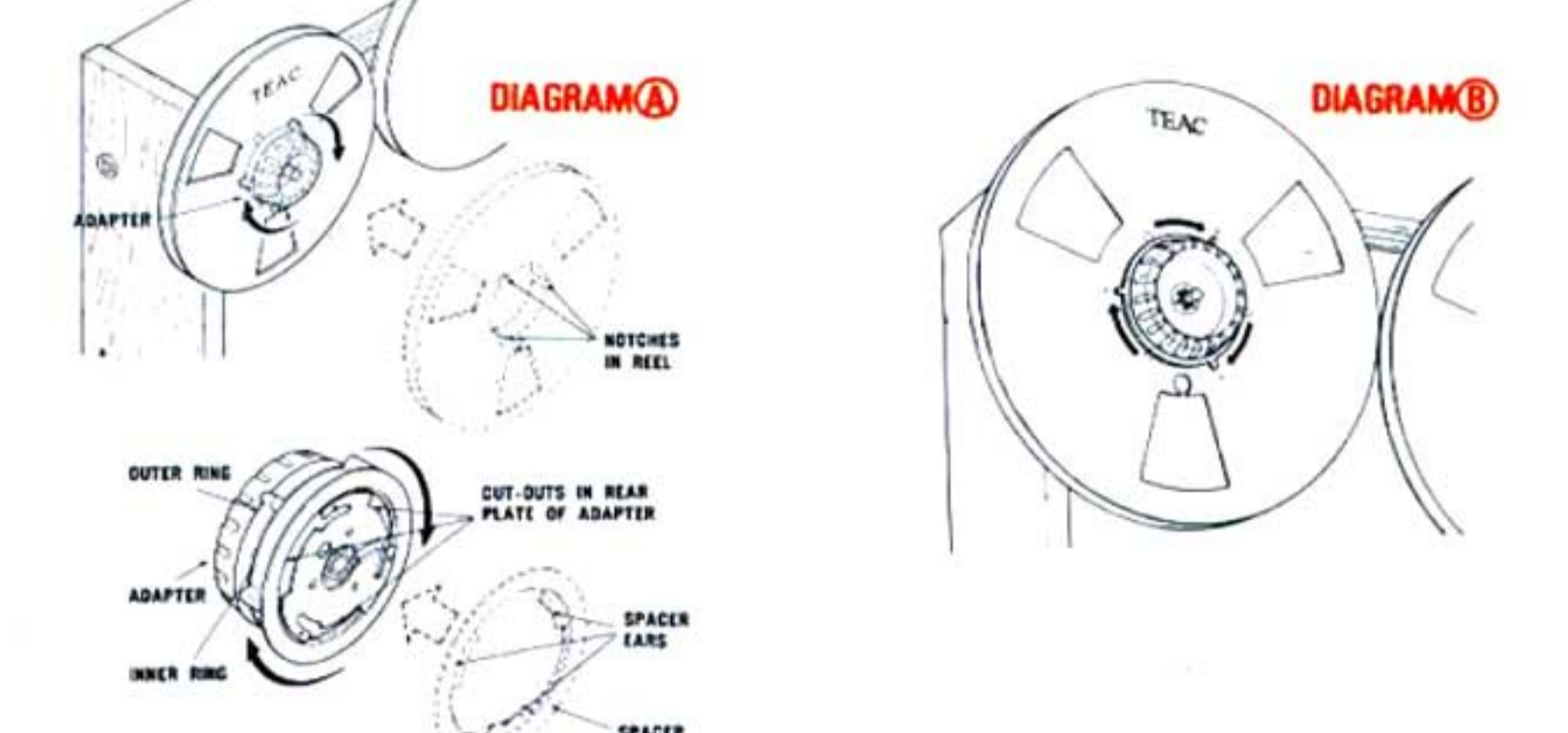
10-1/2" Reel adapter clamp
When using large diameter tape reels use the supplied reel clamp adapter (TZ-612):
1. Secure the reel adapter clamp to the reel tables using the same procedures as above.
2. Turn the locking knob of the adapter fully CCW.
3. Align the 3 notches in the 10" reel hub with the 3 pair of detents on the adapter and push the reel all the way onto the adapter.
4. Turn the locking knob of the adapter tightly clockwise about 90 degrees until the reel is firmly secured to the adapter. When removing the reel from the adapter, turn the locking knob CCW and use both hands to carefully pull the reel off the adapter.

Threading the tape
A. Place the full reel of tape on the left reel table and an empty reel on the right reel table. Secure the "QUIK-LOK" reel holders and 10-1/2" Adaptor (if used)
B. Carefully unreel (pull out) approx. 30" of tape and thread it in the following sequence: around the inside of the left tension arm; back to the left and then around and under the impedance roller; under the head housing; above the pinch roller; under the drive roller (between the roller and the lower guide section of the Shut-off arm); back to the left and around the top section of the Shut-off arm; back to the right and around the right side of the take-up reel (right side).

Procedure:
a. Rotate sections 2 and 1 of the reel shaft fully counterclockwise (CCW).
b. Place the reel onto the reel shaft while slowly rotating the reel CCW to keep both tab sets in line.
c. When the reel is firmly seated on the reel table, turn sections 1 and 2 fully clockwise to secure the reel firmly in place. The tabs on section 2 of the shaft should be centered between the slots on the reel.



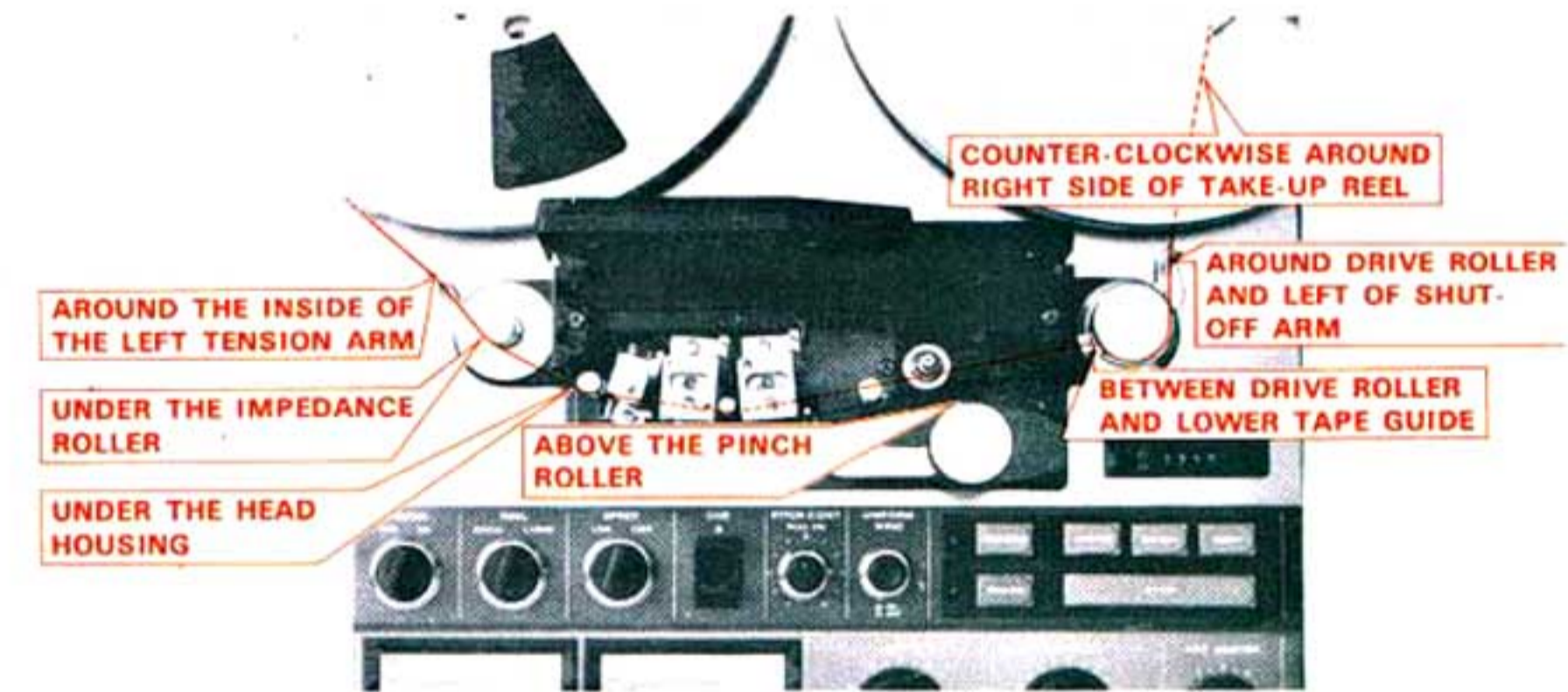
This adapter includes a special spacer (shown in diagram A) which must be used when adapter is used with NAB Standard 10-1/2" Metal reels. To use the adapter with Standard Plastic reels, this spacer must be removed. Removal of the spacer is quite



easy: (1) turn the adapter while holding the spacer until the ears of the spacer match the cut-outs at the back surface of the adapter (2) lift spacer off of the adapter (3) keep the spacer for future use with metal reels.

C. Secure the end of the tape to the take-up reel by holding the tape end in the reel slot while rotating the reel several turns counterclockwise. Continue rotat-

ing the take-up reel until the tape is no longer loose. Correct tape tension for operation will pull both (R and L) tension arms slightly to the outside.



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RECORD MODE Switches
The L and R MODE switches select which channels will be recorded. Both must be ON for stereo recording. Select the desired channel, Left or Right only, for mono-phonetic recording. Both switches should be OFF during Playback to prevent accidental erasure of your valued tapes.

METER Range Switch and Dual-level Meters - Most improved types of tapes are capable of recording levels around +3 VU without noticeable tape saturation distortion. To accommodate these higher input signal levels accurately on the VU meters, switch the METER range switch to HIGH and use the meters' upper scale. Readings of up to +6 VU can then be displayed. Such high-level recording requires consideration of both the tape and the type of audio source.

Monitor Selector Switch - In SOURCE position this switch allows you to hear the input source signal at PHONES jack and to read input level on VU meters for accurate adjustment of the Record Level even without engaging the Record or Record/Pause mode. In TAPE position the off-the-tape sound is heard to provide a reliable check of the sound that is actually recorded on the tape.

SHUT-OFF ARM - Automatically de-energizes the pinch roller when the tape breaks or runs off one or the reels. Tape should be properly threaded per threading chart to hold this arm in position to apply power to the transport.

DRIVE ROLLER - Unique positive contact drive roller especially designed to give non-slip indication of tape passing over it during normal Record and Playback operation, for accurate control of Linear Counter.

LINEAR COUNTER - This counter is unusually accurate because it is controlled by a special drive roller which has a unique cork-like coating that virtually eliminates slippage. The tape passing over the drive roller is "measured" by the rotation of the roller and the information is relayed to the Linear Counter. During normal drive operations or winding the relative position of tape is truly indicated on the Linear Counter. (On the A-7300-2T deck this counter indicates the elapsed record or play time at 15 ips in minutes and seconds. For 7-1/2 ips speed multiply the indicated time by 2 for the actual elapsed time.)

MEMORY REWIND - (On the A-7300-2T only) Depress this button to automatically stop tape during Rewind when the Linear Counter passes 0000.

Pinch Roller - Large diameter "2 step" Pinch Roller is solenoid activated to give smooth, quick starts.

UNIFORM WIND - (on A-7300 4T Deck only) Provides capstan-controlled winding of tapes to insure tape is evenly and smoothly wound for tape storage. With deck in normal play mode, depress UNIFORM WIND button. Tape speed will increase and tape lifters move the tape away from the head to afford smoother tape movement and to prolong head life.

EDIT BUTTON (on A-7300-2T only) - When depressed, deactivates the right reel (take-up) motor. Then, when the forward play button is depressed, the left reel motor begins "dumping" tape until the STOP button is depressed. Note the following precautions: 1. Cut the tape at the selected point before engaging the EDIT facility. 2. Always release the EDIT button as soon as you finish the editing operation. Splice the tape ends, then check this button again before resuming other modes. 3. Automatic end-of-tape shut-off does not function when EDIT is engaged.

PITCH CONTROL - Varies speed of Capstan Motor approximately ±5%. Pull knob out and turn it to control motor speed. Knob has no control of motor when it is not pulled out.

TAPE TRANSPORT PANEL AND OPERATING CONTROLS

RECORD
Both buttons must be pushed together in unison to engage this mode; when engaged, light will illuminate and recording begins. One or both RECORD - MODE switches must be ON. During Playback, you may go directly into Record without using Stop or Pause by this sequence:
1) While in Playback, engage the RECORD - MODE switch(es);
2) Depress and hold the RECORD button while you
3) simultaneously depress the button. This is called "Punch-in Recording" or a "Running Splice".

PAUSE
Light illuminates; tape motion ceases; Pinch Roller retracts slightly from the capstan; Tape Lifters do not extend; circuits selected remain engaged and are restored by pushing the button. Use PAUSE mode for a "manual cue" facility on the A7300 (4 track model).

RECORD-PAUSE
Establishes or retains the Record mode without tape movement. RECORD MODE switch(es) must be ON. Both lights illuminate. Begin to record by depressing the button. Note at this time the very short distance left to be traveled by the Pinch Roller. This "2-step" retraction permits it to return very quickly to the capstan for fast starts.

FAST FORWARD
Tape winds rapidly onto the right reel; tape lifters extend to prevent tape "chatter" and protect the heads; CUE CONTROL may be used to retract the Tape Lifters for cue monitoring.

FAST REWIND
Tape winds rapidly onto the left reel; tape lifters extend and CUE CONTROL may be used as in Fast Forward.

PLAYBACK
Tape moves at the selected tape speed from left to right. Recorded material will be heard. RECORD - MODE switches should be OFF to prevent accidental erasure.

STOP
Tape motion ceases and brakes are applied; Pinch Roller retracts completely; all other modes are released.

Special Recording Information

Mixing and the Input Selector Switches

The art of mixing two different sound sources for simultaneous recording on a channel will readily find creative expression on the A-7300. Inputs, controls and relationships have been paired for simplicity and convenience of operation into two sections, "A" and "B". As either two line inputs, two mic inputs or one line and one mic input may be mixed on each channel, you will soon appreciate this particular arrangement.

First, please notice that the Input Selector Switch for each section determines the type of input (mic or line) for both channels in that section. (If section A — Left channel is MIC, the Right channel will also be MIC). Next, notice the vertical arrangement of the Input Level controls. The two sections (A/B) will always be mixed together as a channel, Left or Right. Finally, all eight input jacks are labeled in three ways: Left or Right; A or B; and MIC or LINE IN. These labels correspond with the Input Level controls, and the type of input as determined by the Input Selector switch. All eight input jacks may be connected but only the two pair as selected by the switches will be accepted.

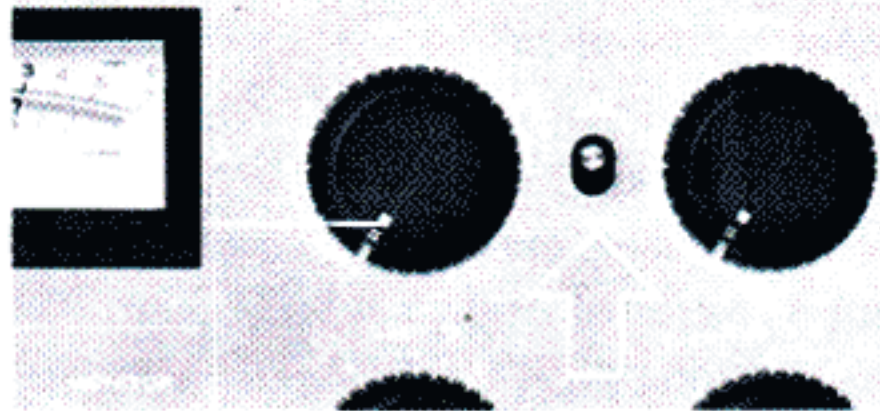
Monitoring is best done through headphones to prevent feedback whistles or squeals in the recording. When recording yourself speaking or singing, use the SOURCE MONITOR position to prevent a time-delay "echo" affect caused by the spacing of the heads.

Experimentation, experience, and extensive study will be required before you can duplicate the accomplishments of a professional recording studio. Microphone selection and placement, room acoustics, recording levels and special techniques must all be carefully considered for optimum results.

Mixing Inputs 1 and 2

Not only must the levels of both inputs together be kept below the recording limit of 0 VU or so, but the relationship between the two inputs must be maintained as desired. More detailed information about mixing is available elsewhere and, in fact, the art of proper mixing is a creative one requiring experience and "trained ears". Briefly it can be said that the input record-

ed at a higher level will appear to dominate and even mask the one at a lower level. The proper or desired relationship between them can only be determined by monitoring, however, for signal strength is established at the source; level controls only adjust the inputs to the desired recording level.



Please consider the following factors while recording a mixed signal.

1. Assuming the REC MASTER Level control is kept stationary, you must adjust both Input Level controls for the desired algebraic total recording level peak on each channel as indicated by the VU meter.
2. Simultaneous with the above, the desired balance between the inputs must be maintained by monitoring (probably through headsets). For example, a vocal solo on one input should not be overwhelmed by the accompaniment on the other.
3. With stereo recording, "center channel" affect should be maintained. Musicians physically centered or musically prominent are generally shared equally by both channels. Other portions are also present on both channels but with a greater presence, intensity or "direction" on one of the channels.

The total number of microphones or other sources may be increased by using one of the commercially available Audio Mixer units. A typical Mixer will accept up to six microphones and amplify those mixed signals for input to the LINE IN jacks in a variety of possible combinations.

Mixing itself is basically simple with the A-7300 as the facility was part of the primary design concept. As an art, however, the finer points of mixing can only be perfected through personal experience. Learning the techniques of mixing through practice will be part of the pleasure of owning the A-7300. We encourage you to experiment with various settings of the controls and enjoy your own creativity.

Each of the 6 black Level Control knobs is encircled with a Memory Marker Guide (M-M), the clear plastic ring with a reference mark. After determining a desired signal level, set the M-M Guide's reference mark to correspond with the setting on the level control. This will simplify restoring a control to the desired place. You can feel the slight detent as the control "clicks" into place on the guide. Please note, however, that an established input level setting for one position of the LINE/MIC Input selector switch will not necessarily be the same for the other position.

The LEFT A, B, and RIGHT A, B Input Level controls are for setting the recording levels from the independent LINE or MIC Input jacks. The REC MASTER controls the master recording level from all of the four Input Level controls simultaneously and in parallel. The REC MASTER knob should be set to the #7 position before establishing levels with the independent Input Level controls. That will provide adequate provision to raise or lower the MASTER level.

The friction-coupled OUTPUT Level controls permit simultaneous and parallel adjustment of both channels' outputs through the SOURCE/TAPE OUTPUT jacks. By grasping either section of the knob (Left or Right channel), you have control over both channels, for both sections are held together by moderate friction coupling. To change only one of the channels, hold one knob stationary while you rotate the other. Position #8 is marked "0 VU". For accurate meter readings, keep this control at position #8. This position will also make the TAPE/SOURCE Output level correspond with the TAPE ONLY output.

Balance between channels

The stereo affect is very dependent upon the relationship between left and right channels. Much of the recorded material is shared by both channels; this appears during playback as the center-channel information. If one channel is recorded at a higher level than the other, it will shift this center image to one side. Further, with one channel dominating, the full stereo affect may be compromised.

A-7300 Stereo Tape Deck

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