

OWNER'S MANUAL



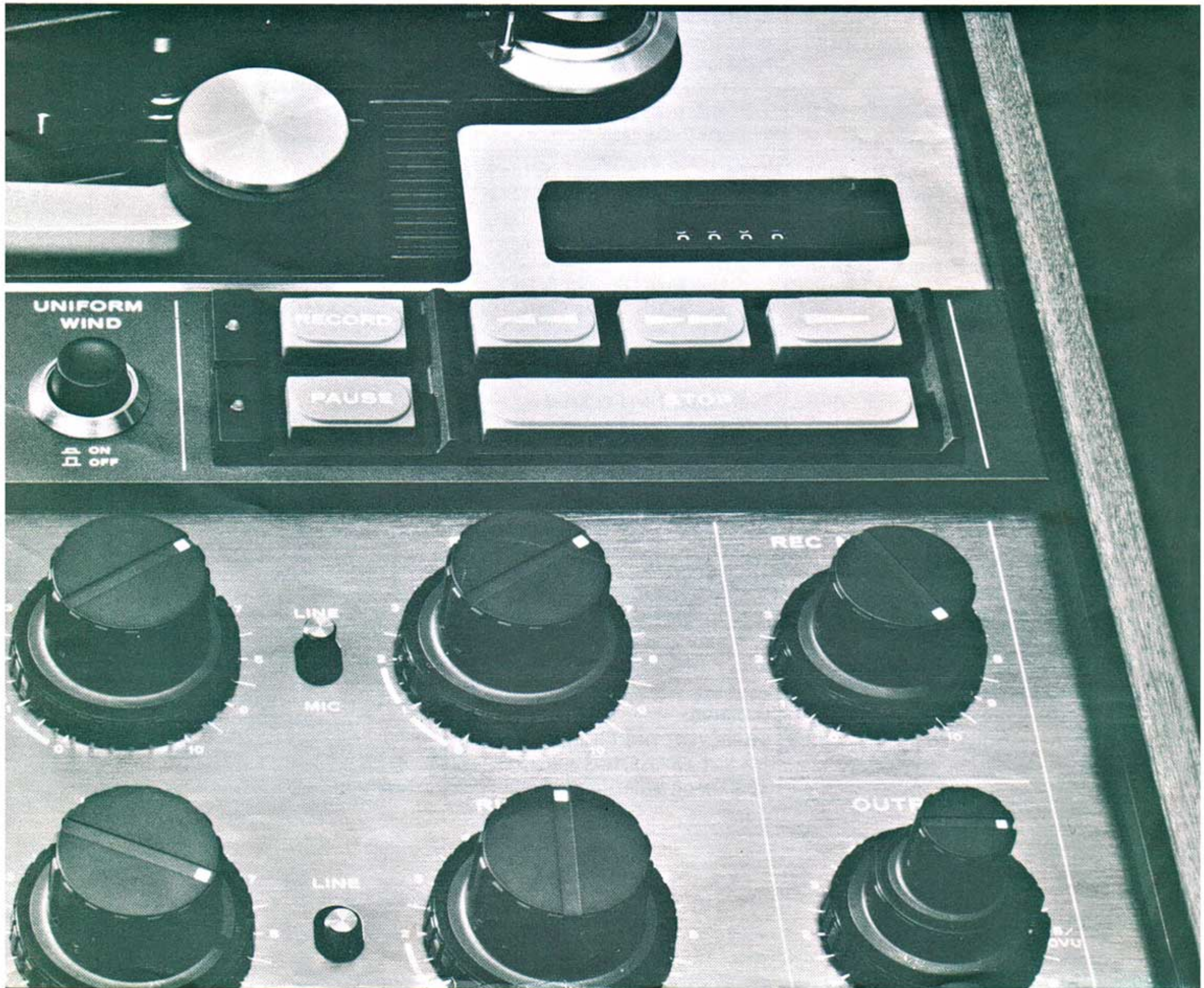
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TEAC[®]

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

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.		

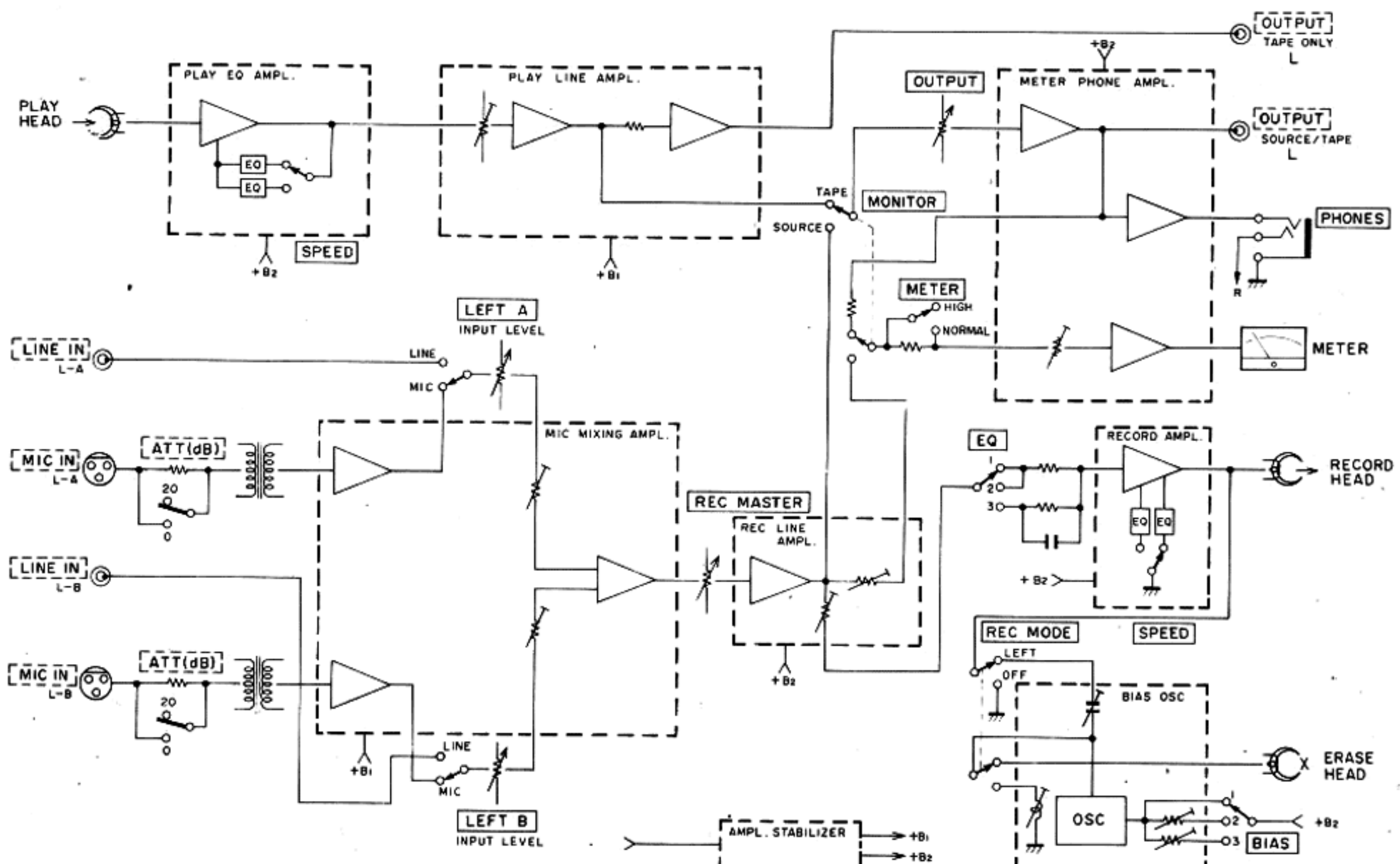
Stereo Playback Procedure and A-7300 Block Diagram.

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.

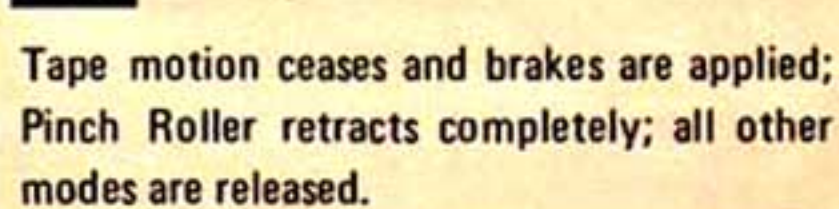
ATT Switches and Microphone Recording Levels

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.



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.

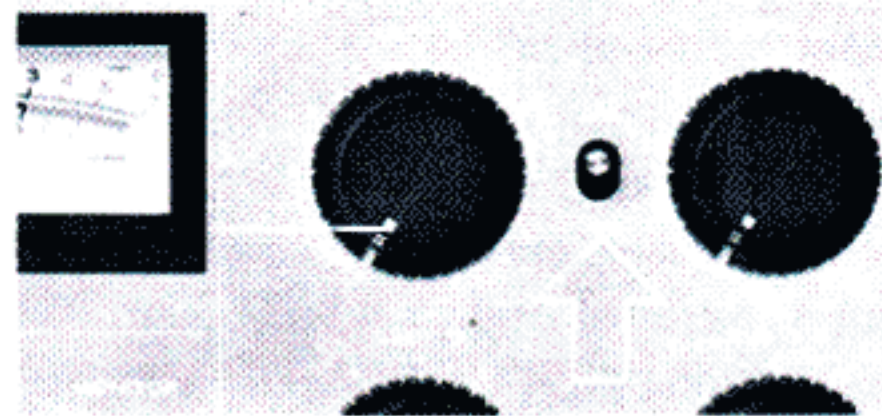
Monitoring is best done through headphones to prevent feedback whistles or squeals in the recording. When recording yourself speaking or singing, use the SOURCE MONITOR position to prevent a time-delay "echo" affect caused by the spacing of the heads.

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

TEAC[®]

The leader. Always has been.

TEAC CORPORATION

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