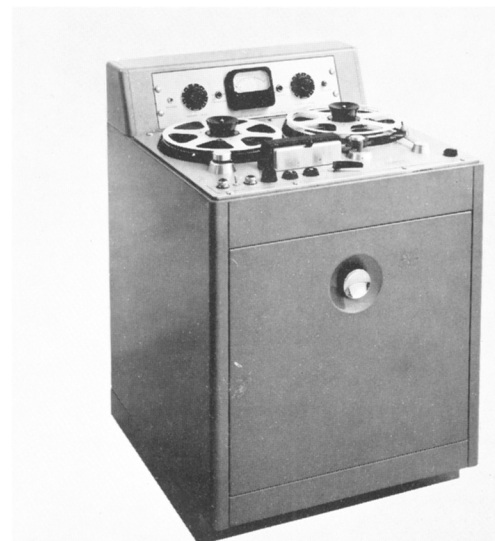


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MODEL 300

SINGLE CHANNEL MASTER
RECORDER/REPRODUCER



AMPEX
PROFESSIONAL PRODUCTS
COMPANY

TM-2013

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Section 1

DESCRIPTION AND PERFORMANCE CHARACTERISTICS

GENERAL

Ampex Series 300 Magnetic Tape Recorder/Reproducers are high quality precision instruments designed for the professional user who requires the finest, most faithful recording and reproduction.

Recorder/reproduce equipment in the 300 series consists of a tape transport, a head assembly, electronic assemblies -- such as a meter panel and record/reproduce electronic assembly.

The tape transport mechanism is capable of handling up to 10-1/2 inch diameter reels, is available for operation at tape speed pair of 15 and 7-1/2 inches per second (ips), utilizing 1/4-inch magnetic tape. By arrangement with Ampex Professional Products Company Audio Division Contract Engineering, a tape transport handling 14 inch diameter reels, may be obtained.

The head assembly contains three full track heads of in-line tracking and uses 1/4-inch magnetic tape. They are erase, record and reproduce respectively.

The record/reproduce electronic assembly contains the reproduce amplifier, record amplifier, power supply and bias and erase oscillator all housed in one compact unit. Mounted above the tape transport in the console cabinet is the meter panel assembly. (See Section 7, METER PANEL ASSEMBLY).

CCIR equalization may be obtained through Ampex Professional Products Company, Audio Division, Contract Engineering and referenced by TM2006.

Console, portable, and rack mounting arrangements are available.

PERFORMANCE CHARACTERISTICS

All performance characteristics of the Model 300 Magnetic Tape Recorder equal or exceed the standards of the NAB (National Association of Broadcasters). All Ampex Audio recorders produce a tape frequency characteristic which has been accepted as standard by the NAB.

Tape Width:

1/4-inch

Tape Speed Pair:

15 -- 7-1/2 inches per second (ips)
15 and 7-1/2 ips, with speed change effected by a single control. The same control also provides the necessary equalization change to compensate for the change in speed.

Frequency Response:

At 15 inches ± 2 db 30-15,000 cycles.
At 7-1/2 inches ± 2 db 40-10,000 cycles.
Down no more than 4 db at 15,000 cycles.

Signal-to-Noise Ratio:

Over 70 db unweighted noise to maximum recording level. Over 60 db, as defined by NAB standards, the signal-to-noise ratio is the ratio of peak recording level to the total unweighted playback noise when erasing a signal of peak recording in the absence of a new signal. Thus bias and erase noise are included, as well as playback amplifier noise. All frequencies between 50 and 15,000 cycles are measured. The peak recording level is defined as that level at which the overall (input to output) total rms harmonic distortion does not exceed 3% when measured on a 400 cycle tone.

Flutter and Wow:

Speed (ips)	Flutter and Wow (percentage rms)
15	0.1%
7-1/2	0.2%

The flutter and wow measurements include all components between 0 and 300 cycles using an rms meter calibrated to read the rms value of constant amplitude sine wave flutter.

<u>Reproduce Time:</u> (NAB 10-1/2-inch Diameter Reels, 2400 feet of tape)	Speed (ips)	Full Track	
		(hrs)	(min)
	15		32
	7.5	1	4

The Model 300 will also accommodate the standard EIA reel in various thicknesses.

Starting Time: Instantaneous. When starting in the PLAY mode of operation the tape is accelerated to full speed in less than 1/10 of a second.

Stopping Time: When operating at 15 ips, the tape moves less than two inches after the STOP button is pressed, at 7.5 ips, less than one inch.

<u>Reproduce Timing Accuracy:</u>	Accuracy	Accuracy	Length of Recording
	(percentage)	(sec)	(min)
	±0.2%	±3.6	30

Rewind Time: Approximately 1 minute for a full 2,400 foot NAB reel.

Controls: Tape Motion -- All tape motion is controlled by three pushbuttons and a mode selector switch. The relay operated pushbuttons control START, STOP, and RECORD functions, and the switch provides a means for selecting FAST FWD, REWIND and PLAY modes of operation. START, STOP, and RECORD may also be remote controlled.

NOTE

By shuttling the mode selector switch back and forth, instantaneous changing from one mode of operation to another (without stopping between) can be accomplished.

Complete Plug-in Head Housing: Double numetal shield cans on reproduce head, equivalent shielding on record head, matching self-aligned covers on hinged gate. Drop-in threading.

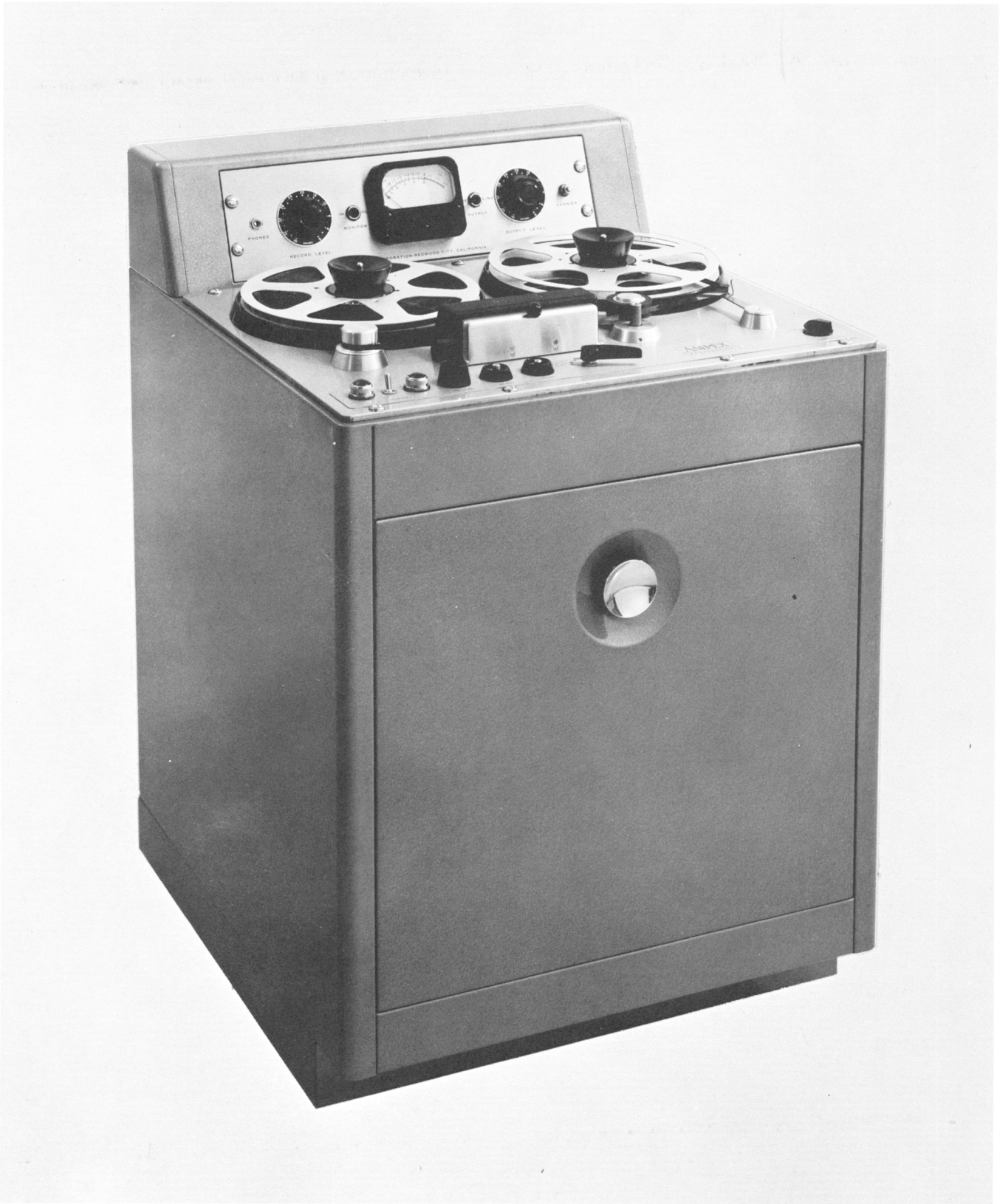


Fig. 1-1 MODEL 300 RECORDER/REPRODUCER (CONSOLE)