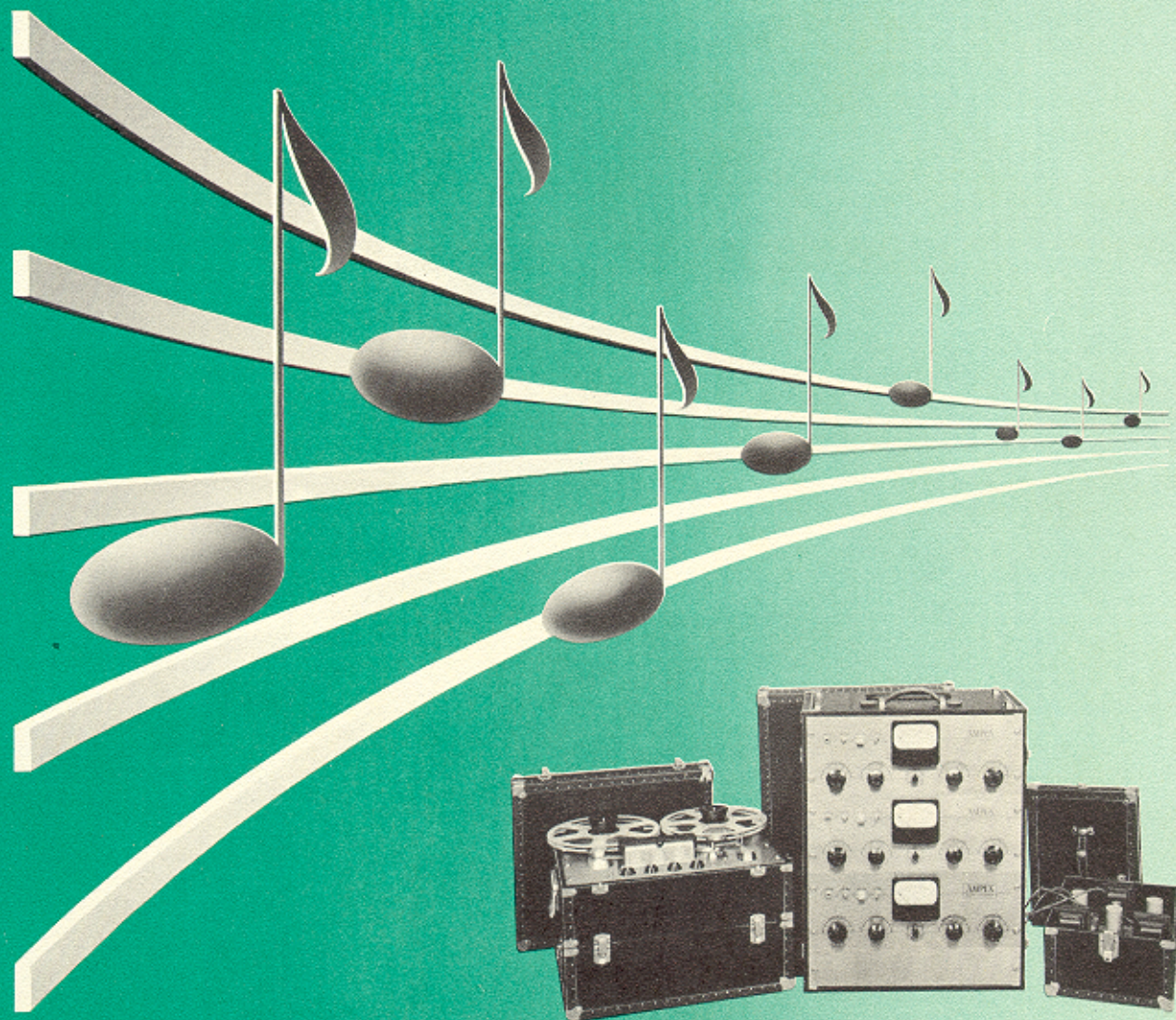


AMPEX

TWO AND THREE CHANNEL AUDIO TAPE RECORDERS



- **FOR STEREOPHONIC SOUND**
Achieving depth, direction and utmost realism in recorded music, dialogue and other sounds — used for entertainment, education or scientific research.
- **FOR PARALLEL RECORDING**
Synchronizing separate sounds — such as music with commentary, dialogue with cues, or noises with spoken identification.

FOR THE REALISM OF STEREOPHONIC SOUND

Stereophonic recordings are a sensational listening experience because of their extreme realism. They attain a natural sense of depth and direction by dividing sounds into components. These reach the listener's left and right ears at precisely separated instants. The result is so effective you feel as though you were listening to a live performance. But in addition to its striking effect, this "third dimension in sound" has great practical advantages in numerous fields:

In *acoustical studies*, such as noise reduction and acoustical studies, it permits a far more acute degree of identification, comparison and study than is possible by other means.

In *theatrical recordings*, the playback of stereophonic recordings enables the participants to sit as a sensitive and critical audience to their own performance.

In *theater*, the theater audience is given an audible "sense of presence." Dialogue and sound effects have depth and a proper directional source. (Rather than tape, this uses magnetic tracks on film.)

In *training*, stereophonic recordings make it possible to present military, professional or industrial trainees with "perfect" samples of the sounds they are learning to identify.

In *entertainment*, the utter realism of stereophonic recordings can be a sensational source of enjoyment and entertainment.

AMPEX



FOR THE VERSATILITY OF PARALLEL RECORDING

On the two or three channels of these Ampex machines, any conceivable combination of sounds can be recorded, provided a 30 db signal separation between tracks is adequate. They remain independent of each other except for their closely timed parallel positions on the tape.



Here Gilda steps forward

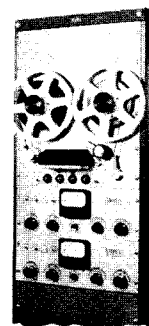
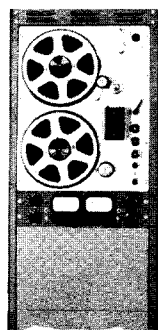
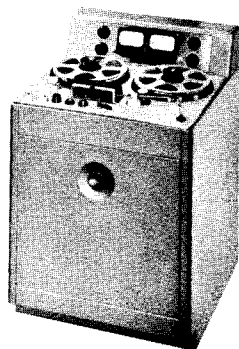
A Chicago impresario operating a puppet opera records music on one track and simultaneous keyed instructions to the puppeteers on another. This provides a simple method of cueing action to music.

An industrial concern records research sound data on one track and a simultaneous commentary on another. Thus the recorded sounds are explained at the same time they are being recorded.

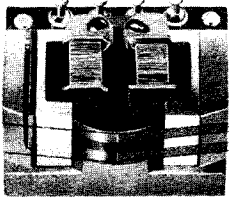
The medical department of a midwestern university uses an Ampex two channel recorder for otological research and subjective hearing tests. Sound phenomena recorded on one track and the subject's responses on another provide precise experimental control.

A language school records correctly pronounced sentences on one channel. Individual students listen and repeat the sentences onto the other. By this means they are able to hear and compare their pronunciation with the correct example.

It has often been mistakenly assumed that Ampex multi-channel audio recorders could be used for magnetic data recording. Actually data recording generally requires different heads and equalization. Inquiries should be referred directly to Ampex Corporation to assure purchase of the correct machine.



THE PRINCIPLE OF TWO (or three) CHANNEL RECORDERS

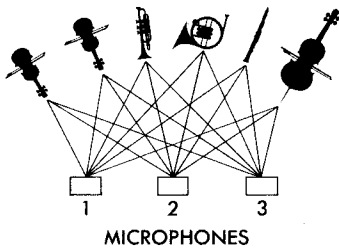


In effect a two channel recorder is like two recorders operating on the same tape. The recording head unit is actually two separate heads one on top of the other (i.e. side-by-side) with an insulating material between; the playback head is the same. There are two record amplifiers, two playback amplifiers, two V-U meters and two sets of controls. Thus the sounds on the two (or three) channels are kept independent except for their precise relative timing.

TWO TECHNIQUES FOR "SOUND WITH DEPTH"

In speaking of recordings with depth and direction, two words **stereophonic** and **binaural** have often been loosely interchanged. Ampex multi-channel recorders can be used for either type, but actually they are two entirely different techniques:

• Stereophonic recording and reproduction



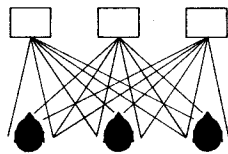
This technique is essentially "panoramic" and can be heard by a large audience. It can use either two or three channel recording (three is preferable).

RECORDING

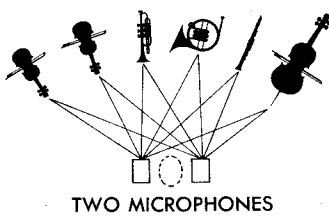
Microphones are spaced out in a standard pattern to "hear a panorama of sound." Each picks up all of the sounds in a "space-time-loudness" relationship and transmits it to a separate track on the tape.

REPRODUCTION

Speakers playing off the separate tracks are placed in the same relative position as were the microphones. Thus they pass on the same "space-time-loudness" relationship that the microphones picked up.



• Binaural recording and reproduction



This is "two ear" sound. It achieves the sense of depth and direction using only two tracks. **But each listener must wear earphones.**

RECORDING

Two microphones are spaced like human ears and separated by a non-resonant wall simulating the human head.

REPRODUCTION

The listener hears a separate sound track through each earphone. This duplicates his normal two ear hearing.



AMPLEX RECORDERS

Professionally accepted as the finest

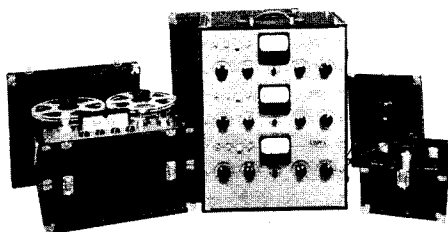
Ampex magnetic tape recorders of various models are widely used by the most critical professionals:

- The American Broadcasting Company
- The Columbia Broadcasting System
- The Decca Record Company
- The EMI Records Company
- The General Electric Company
- The RCA Victor Company
- The United States Navy
- The United States Army
- The United States Air Force
- The United States Marine Corps
- The United States Coast Guard
- The United States Customs Service
- The United States Department of Justice
- The United States Department of State
- The United States Department of Education
- The United States Department of Health, Education and Welfare
- The United States Department of the Interior
- The United States Department of Labor
- The United States Department of Transportation
- The United States Department of the Treasury
- The United States Department of War
- The United States Department of Defense
- The United States Department of Energy
- The United States Department of Housing and Urban Development
- The United States Department of Agriculture
- The United States Department of Commerce
- The United States Department of Justice
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- The United States Department of Defense
- The United States Department of Energy
- The United States Department of Housing and Urban Development
- The United States Department of Agriculture
- The United States Department of Commerce

In addition they have had wide acceptance by universities, schools, government and high fidelity enthusiasts. In total they have far outsold any other tape recorders of comparable professional quality.

The two and three channel audio recorders described in this brochure are special types, but they incorporate these basic characteristics that have put Ampex machines in a class by themselves:

- Adherence to specification
- 15,000 cycles/sec. Response at either 7½ or 15 in/sec.
- Accuracy of timing
- Precision of phase relation
- Fast response to controls
- Low operating cost



See back page for detailed specifications

**MULTI-CHANNEL
AUDIO
RECORDERS
300 AND 350 SERIES**

**GENERAL PERFORMANCE CHARACTERISTICS
AND SPECIFICATIONS**

FREQUENCY RESPONSE

NOTE: The following data pertains to both the 300 and the 350 series machines.

15 in/sec. — 30 to 15,000 cycles/sec. ± 2 db.
7 1/2 in/sec. — 30 to 15,000 cycles/sec. (40 to 10,000 cycles ± 2 db; down no more than 4 db at 15,000 cycles)
3 3/4 in/sec. (optional speed) — 50 to 7,500 cycles/sec. (50 to 5000 cycles ± 2 db; down no more than 4 db at 7,500 cycles)

**STARTING TIME
PLAYING TIMES**

Instantaneous (tape accelerates to full speed in less than 1/10th second).
32 min. at 15 in/sec. Using NARTB
64 min. at 7 1/2 in/sec. 10 1/2" reel.
2 hrs. 8 min. at 3 3/4 in/sec. (optional speed) (2400 feet of tape).
At 15 in/sec., tape moves less than 2 inches after pressing "stop" button.

**STOPPING TIME
PLAYBACK
TIMING ACCURACY
REWIND TIME**

$\pm 0.2\%$ or ± 3.6 seconds in a thirty minute recording.
Approximately one minute for 10 1/2 inch NARTB reels.

**SIGNAL-TO-NOISE
RATIO
MONITORING**

Over 55 db at either 7 1/2 or 15 in/sec.
Independent record and playback systems permit simultaneous monitoring while recording. Full track erase assures freedom from confusion with previous recordings.
Phone jack permits monitoring input signal before recording or output signal during playback.
A-B switch makes possible direct comparison between original and recorded program.
VU meters permit signal-level comparison, also read bias and erase current when switched to suitable positions.

HEAD HOUSING

Erase, record and playback heads contained in single unit.
Both record and playback heads are separately shielded; (playback head in a double mu-metal box).

POWER REQUIRED

117 volts, 3 amperes, 60 cycles (also available for 50 cycles).

NOTE: The following data pertains to either the 300 or the 350 series as indicated.

FLUTTER AND WOW

300 SERIES	350 SERIES
15 in/sec. well under 0.1%	15 in/sec. well under 0.2%
7 1/2 in/sec. well under 0.2%	7 1/2 in/sec. well under 0.25%
3 3/4 in/sec. well under 0.25%	3 3/4 in/sec. well under 0.3%

RECORD AMPLIFIER

Distortion in amplifiers is a negligible part of the total system distortion at any level.
Microphone input as low as minus 80 dbm for + 4 VU record and playback level.

PLAYBACK AMPLIFIER

Bridging or matching input (as ordered).
Balanced or unbalanced bridge input; + 4 VU line.
Delivers + 20 dbm with approximately 1% total harmonic distortion.
Feeds directly into high impedance with approximately 1 volt.

CONTROLS

Adjusted for + 4 VU output, 600 ohms (or 150 ohms balanced or unbalanced).
Adjusted for + 4 VU output, 600 ohms balanced or unbalanced.
"In-line" pushbuttons: START, STOP, and RECORD.
"In-line" pushbuttons: START, STOP, FAST FORWARD and REWIND; instant changing between fast forward and rewind; remote control available.

**RACK SPACE
AND WEIGHT**
Standard 19 inch wide panel with commercial notching.

Selector switch for NORMAL PLAY, FAST FORWARD and REWIND — "instant changing" without stopping in between.
Separate RECORD button; separate tape speed equalization, reel size switch and tape speed switch.

DIMENSIONS AND WEIGHTS FOR CONSOLE AND PORTABLE CASES

Tape transport — 24 1/2" of rack space; 72 lbs.	Tape transport — 15 3/4" of rack space; 52 lbs.
Each electronic assembly — 12 1/4" of rack space; 36 lbs. (Two required.)	Each electronic assembly — 7" of rack space; 16 lbs. (One for each channel.)
Meter control panel — 5 1/4" of rack space; 6 3/4 lbs.	Each power supply — 3 1/2" of rack space; 18 lbs. (One for each channel.)
Console (Model 300)	Portable (Series 350)
36 1/2" high x 26 1/4" wide x 26" deep; 75 lbs.	Model 350-2P — two track top-plate case — 15 1/2" x 20 1/4" x 17"; 17 lbs.
	Electronics case — 18 3/4" x 20 1/2" x 11 1/2"; 18 lbs.
	Power supply case — 7 3/4" x 8 1/2" x 15 1/2"; 5 lbs.
	Model 350-3P — three track top-plate case — 15 1/2" x 20 1/4" x 17"; 17 lbs.
	Electronics case — 27 3/4" x 21 1/4" x 15 1/2"; 25 lbs.
	Power supply case — 14 1/2" x 8" x 11 1/8"; 7 lbs.

**SERIES 300 OR 350
MOUNTING STYLE
TAPE SPEEDS
NUMBER OF TRACKS
POWER FREQUENCY**

OPTIONS TO SPECIFY WHEN ORDERING

Console (300 only), Rack Mounted (either 300 or 350) or Three Case Portable (350 only).
7 1/2 and 15 in/sec. or 3 3/4 and 7 1/2 in/sec.
Two Track or Three Track (350 only).
60 or 50 cycles/sec.

ACCESSORIES

Control START, STOP, FAST FORWARD, REWIND and RECORD from remote location.
Catalog No. 5763 is mounted in wooden case and is completely wired.
Catalog No. 5763-1 is on flat plate for flush mounting in studio consoles and is not wired.



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