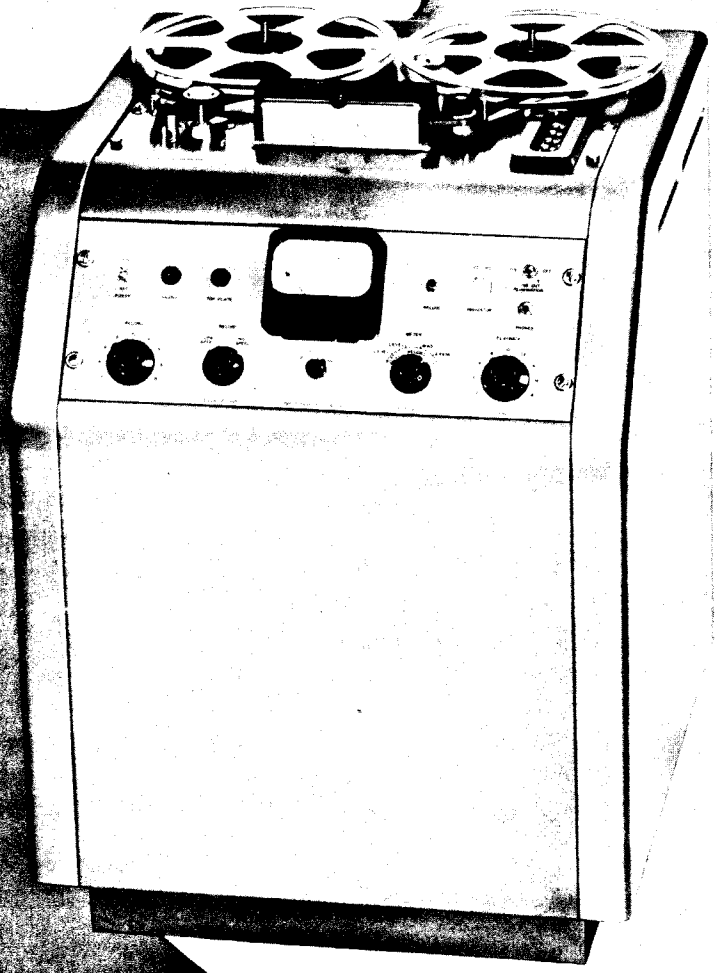
BULLETIN A-212

The Distinguished

SERIES *400* CONSOLE



New

- BEAUTY
- PERFORMANCE
- CONVENIENCE

AMPEX

Leader in Audio and Data Recording!

Dependability YOU CAN TRUST!

The kind of DEPENDABILITY that is exclusively Ampex results in simplified operation, low maintenance costs, freedom from breakdowns, and the reserve capacity to handle heavy-duty recording loads over longer periods of time.

Ampex features include:

EASE OF HANDLING. Push button operation for Record, Playback, Rewind, Fast Forward and Stop is available for the first time in Series 400 recorders. This provides easy manipulation of the top-plate and makes possible the use of full remote control. The instant response of these recorders to their relay-solenoid control system permits exact cueing and quick handling of the tape by the operator. Ampex reliability on remote operation saves time and assures more efficient use of studios and recording equipment.

PRECISION TIMING. The Ampex tape transport mechanism is precisely timed and positive in action. In a 30-minute period the timing is well within 3.6 seconds. This feature protects station commercial time and revenue by preventing the "cut off" of closing commercials. It also allows interchangeability of tapes which have been recorded on other Ampex recorders. Ampex "Speed-Lock" equipment is available for adjusting the speed of the playback machine to maintain lip synchronization with motion picture equipment.

DUAL-SPEEDS. Series 400 Ampex recorders incorporate the NARTB (National Association of Radio & Television Broadcasters) standard commercial tape speed of 15 inches per second and the secondary standard of 7½ inches per second. All NARTB commercial recording specifications for 15 inches per second performance are also met in this equipment at 7½ inches per second. This means that with half the tape consumption required by other professional recorders you can maintain commercial recording quality. The simple turn of a switch gives motor speed and equalization change.

HALF or FULL TRACK. Model 402 records on half the width of the standard quarter-inch tape while Model 403 utilizes the full tape width. Half-track recording is of special value to the recording enthusiast, or wherever economical use of tape is a factor. Half-track recording gives each reel double the program capacity while maintaining all specifications for performance.

LOW NOISE & DISTORTION LEVEL. Ampex multi-alloy shields completely eliminate pickup of extraneous noise by the record and playback heads. This low noise level allows recording at low distortion levels and makes possible recordings with extremely wide dynamic range undiscernible from the original.

FULL AUDIO RANGE. 15,000 cycle response at 7½ inches per second meets the broadest professional requirements with important savings in tape. Every mood, level and inflection of voice and instrument is captured and recorded with unrivalled fidelity. Full-hour-full-range recording can be put on a single 10½" NARTB reel. In the many recording requirements of business, industry, education, medicine, voice training and the like, the real-life voice of Ampex assures playback with incredible exactness.

BUILT-IN PREAMPLIFIER. This eliminates the need for auxiliary amplifiers when using a broadcast microphone and bridging low level lines. This low noise level preamplifier uses a DC heated input tube.

SUSTAINED PERFORMANCE. The proved ability of

Complete ACCESSIBILITY *---while in operation*

TOP PLATE LIFTS

. . . the entire top-plate assembly tilts upward simply by removing two front-corner screws. A supporting arm holds the top-plate at an angle for quick, easy inspection.

FRONT PANEL GLIDES OUT

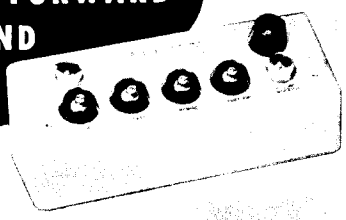
. . . removal of panel screws allows the electronic assembly to fold out.

TIP-OVER ELECTRONICS

. . . hinged electronic assembly makes inspection of components easy.

5 function PUSH BUTTON CONTROL BOX

START
RECORD
FAST FORWARD
REWIND
STOP



Ampex recorders to retain their initial performance under "Continuous Duty" operation is a major benefit to users. Superb Ampex design and meticulous construction provide this faultless operation. An Ampex will pay for itself quickly by eliminating out-of-service time and cutting costly maintenance to the vanishing point.

CATALOG NUMBER of SERIES 400 RECORDERS

Type	*Mount*	*Number* 60-Cycle	50-Cycle
402 Half-Track	Console	3672	3672-1
	Rack	3673	3673-1
403 Full-Track	Console	3675	3675-1
	Rack	3676	3676-1

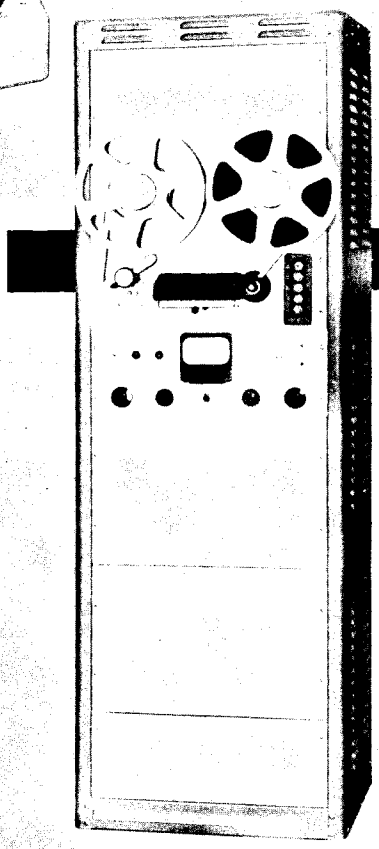
The Series 400 Single Case Portable is described in Ampex Bulletin A-211.

MODEL 402 (half-track head) . . . CONSOLE • RACK MOUNT

MODEL 403 (full-track head) . . . CONSOLE • RACK MOUNT

EXTRA LONG-LIFE MAGNETIC HEADS

. . . initial performance retained for thousands of hours



RACK MOUNT

Both Model 402 and 403 are also furnished for rack mounting on standard 19" wide rack with standard notching. Mechanical unit has a 15¾" high panel; the electronic assembly has a 7" high panel and the power supply assembly has a 3½" high panel. Weight 70 lbs.

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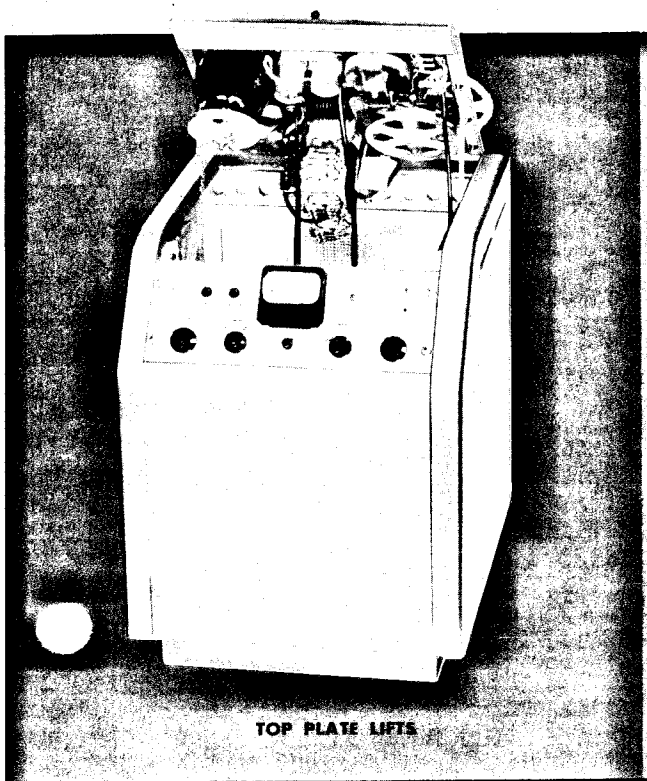
Console Dimensions: 23⅛" wide, 30¼" high, 25⅜" deep. Weight 125 pounds.



TOP PLATE LIFTS

Important Features

- **1. DUAL SPEEDS** — *7½ & 15 inches per second*
- **2. REMOTE CONTROL** — *push button operation permits full remote control*
- **3. BUILT-IN PREAMPLIFIER** — *for microphone & bridging low level line*
- **4. PRECISION TIMING** — *within 3.6 seconds per 30 minutes*
- **5. FULL AUDIO RANGE** — *15,000 cps at 7½ inches per second*
- **6. MINIMUM MAINTENANCE** — *built for heavy-duty service*
- **7. WIDE DYNAMIC RANGE** — *low noise level with low distortion*

C TAPE RECORDER EVER BUILT

SPECIFICATIONS

TAPE SPEED

7½ and 15 inches per second with motor speed change and equalization switches conveniently located.

FREQUENCY RESPONSE

At 15 inches ± 2 db. 30-15,000 cycles.
At 7½ inches ± 4 db. 30-15,000 cycles, ± 2 db. 40-10,000 cycles.

SIGNAL-TO-NOISE RATIO

Over 65 db. unweighted noise to maximum recording level. Over 55 db. as defined by NARTB standards. (By NARTB definition 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 level and in the absence of a new signal.) Thus, bias, erase and playback amplifier noises are included. All frequencies between 30 and 15,000 cycles are measured. The peak recording level is defined as that level at which the over-all (input to output) total rms harmonic distortion does not exceed 3% when measured on a 400 cycle tone.

STARTING TIME

Instantaneous. The tape accelerates to full speed in less than 1/10 second as the capstan drive operates continuously when power is on.

STOPPING TIME

When playing at 15 inches per second tape travel is less than 2 inches after stop button is pressed.

FLUTTER and WOW

At 15 inches well under 0.2% rms measuring all flutter components from 0 to 300 cycles using a tone of 3,000 cycles. At 7½ inches per second under 0.25%.

PLAYBACK TIMING ACCURACY

Within ± 3.6 seconds during a full 30 minute playback.

PLAYING TIME

32 minutes at 15 inch speed with standard NARTB reel; 64 minutes at 7½ inch speed (on each track). The standard 5 and 7-inch RMA reels can also be used on the tape supply turntable. Model 402 records on one-half the width of ¼ inch tape in accordance with RMA standards. By turning the reel over the second half-track is recorded thus doubling the program capacity of each reel.

REWIND TIME

Rewind time for the full 2400-foot NARTB reel is approximately 1½ minutes.

CONTROLS

Four push buttons control the functions of Start (Play), Fast Forward, Rewind and Stop. A fifth push button energizes the record relay which drops out when the machine is stopped. As the functions are relay operated the control buttons may be placed at a remote location.

ACCESSORY EQUIPMENT

FOUR CHANNEL MIXER

A four channel high level mixer — preamplifier is available for use with the rack versions of Models 402 and 403. Furnished on a 7" panel, 19" wide with standard commercial notching. Catalog No. 3761.

RECORDING ROOM PEDESTAL

A pedestal with matching finish is available to raise the Series 400 Console to a top height of 39¼" above the floor level. Catalog No. 3795.

SET OF CASTERS

Where the Series 400 Console requires frequent shifting from one location to another a set of four easy rolling casters is available. These will fit directly to the Console or to the Pedestal. Catalog No. CB-1.

REMOTE CONTROL BOX

Five function control box is available. Attachment to the recorder is to the terminal strip provided or by means of a special plug which can be installed as an extra at the factory. Catalog No. 3766.

SPEED-LOCK EQUIPMENT

Model 380 Ampex Speed-Lock Equipment synchronizes Ampex Recorders with motion picture equipment. Ask for special Bulletin.

SHIELDED HEAD HOUSING

Record and playback heads are completely shielded from stray fields by multi-alloy enclosures.

SIMULTANEOUS MONITORING

Independent record and playback systems allow the tape to be monitored while recording.

INPUT

A switch allows the recorder to accommodate either microphone level low impedance input or to bridge 600 ohms plus 4 VU line balanced or unbalanced. Minus 70 dbm on microphone input will produce recommended record level.

OUTPUT

Plus 4 VU output into 600 ohms balanced or unbalanced will feed high or low impedance amplifier directly with approximately one volt.

METERING

The 4-inch VU meter mounted on the front panel provides for:

a. Direct monitor of record input signal before or during recording.
b. Monitor of recorded output signal from playback head while recording or during playback.
c. Reading bias current.
d. Reading erase current.

PHONE MONITORING

A phone monitor jack provides for direct monitor of record input signal before or during recording, and for monitor of recorded output signal from playback head while recording or during playback. An A-B switch permits direct comparison between the original and recorded program during recording. This switch transfers the VU meter for level comparison and monitoring.

POWER INPUT REQUIREMENT

115 volts AC; 2 amperes. Recorders available for either 60 or 50 cycle operation.

EQUALIZATION

Record and playback equalization are in accordance with NARTB standards. Tapes made on any recorder built to NARTB standards may be reproduced on a Series 400 without change.

• *Distributed by*

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