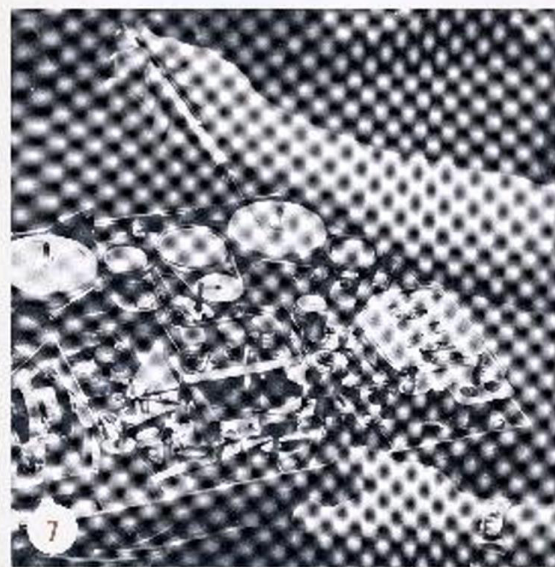




AMPEX

FINE LINE **F-44** SERIES

New 4-track stereophonic and monophonic recorder/players . . . each individually adjusted, aligned and tuned . . . each optimized to its own individual peak of performance to give you a truly customized recorder . . . another reason why . . . Ampex is the name for excellence.



AMPEX  
FINE LINE  
**F-44**  
SERIES

### Each Recorder is brought to its own Peak of Performance

Specifications are used to indicate a recorder's performance characteristics... but your F-44 is more than a mass-produced recorder manufactured to meet minimum specifications printed on a piece of literature... each F-44 series recorder has been optimized at every stage of production to obtain its maximum performance characteristics... each recorder is one-of-a-kind... it's **your** recorder.

# Optimizing your F-44 to its own Peak of Performance

**Begins** ... with the inspection, testing and alignment of component parts before they are assembled to insure they meet Ampex design specifications... shown at left (1) a technician adjusts the Bias Oscillator Transformer for maximum second harmonic rejection (minimum harmonic distortion)... even the die-cast frame is re-checked prior to assembly to verify the micro-milling operation, here (2) a plane gauge is used to determine whether the magnetic head mounting and tape guides are within the 1/1000" tolerance required.

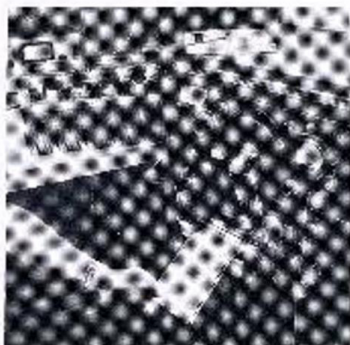
**Continues** ... through every stage of sub-assembly, here (3) the F-44's Channel Selector Switch is inspected and checked for workmanship... then, the very same switch is checked again (4) when it has been assembled in the electronics chassis... the completed electronics chassis is then aligned and tuned (5) following a 33-page, step-by-step procedure that simulates all normal operating conditions with inputs and outputs measured, aligned and tuned to optimum performance.

**Includes** ... mechanical as well as electrical adjustment and alignment to assure optimum performance from the tape transport system... after assembly of electrical and mechanical sections, the completed recorder is subjected to a 16-hour "break-in" (6) with the clutch tied into operating mode so that it is stable when finely adjusted (electronics are on during break-in period)... at the end of 16 hours, the transport's mechanical components are once more aligned (brake, clutch, hold-back tension spring, capstan drive, counter, etc.)... here (7) a tension gauge is used to measure (for adjustment, if necessary) the spring on the capstan idler drive to insure proper tension on the capstan, thus eliminating unnecessary pressure on the tape or tape slippage.

**Meantime** ... the 3 magnetic heads for your F-44 recorder are being inspected and aligned to tolerances so precise they require special, Ampex-designed micro-optical measuring equipment... an optical comparator is used to align the height, azimuth and perpendicularity of the F-44's heads to the tape guides... head gap requirements are held to less than 10 millionths of an inch and here (8) a 50-power microscope is used to align the gap in the center of the area where the tape will make contact with the head (to attain equal distribution of tape wear on both sides of the head gap).

**Ends** ... at three, final inspection and alignment stations... one (9) is in a sound-proof chamber where the mechanical function of the tape transport is once more aligned and adjusted for: speed accuracy to within 1%; optimum torque from the hysteresis synchronous motor to operate all functions with a minimum of line voltage; audible mechanical noise... the second station, where: recording and playback response are optimized through 15,000 cps; record bias is adjusted to minimum distortion; the second playback amplification stage is adjusted to optimize the output of the playback head and electronics on each channel... and the last station, where your F-44's performance characteristics are once more verified to assure you the peak of performance from your F-44.

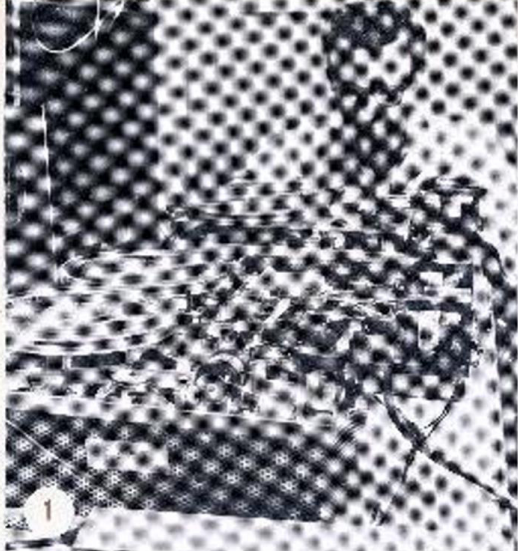
**This Requires** ... 41 testing, measuring and alignment instruments representing over \$156,500... the full time of 13 technicians... and a dedication to make each F-44 the finest quality stereo tape recorder/player money can buy.



## You can have your F-44's own Performance Characteristics

Because each F-44 recorder is a one-of-a-kind, an individual record is kept of its performance characteristics. As each F-44 is optimized to its own peak of performance, a record is kept of the important performance characteristics: Overall Frequency Response/Signal-to-Noise Ratio/Flutter-Wow Measurement/Crosstalk Rejection. You will obtain your F-44's own specifications when you return the 1-year Warranty Registration card to Ampex.

At left: Making the frequency response measurement on an F-44 recorder using a Sweep Frequency Generator.



- (1) The 6000-hour Life Cycle Test, equivalent to 6-8 years operation, puts a recorder through a complete, record-play fast wind-rewind cycle over 90,000 times under constant monitoring.
- (2) The Environmental Chamber subjects the F-44 to temperatures from  $-50^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$  under various controlled humidities.
- (3) Removing the F-44 from the Environmental Chamber for checking, testing and evaluating effects of extreme high and low temperatures during 36-hour test.



- (4) The F-44 in its shipping carton is subjected to extreme vibration on a vibration table and...
- (5) Put on an incline rack for an impact-shock test 4-6 times.
- (6) Then the recorder is removed from the shipping carton and placed on another vibrator table where it is bounced in resonance for two hours while operating.
- (7) \$8,600 worth of testing and measuring equipment is then used by the Quality Assurance group to check the F-44 against its original performance characteristics.



AMPEX

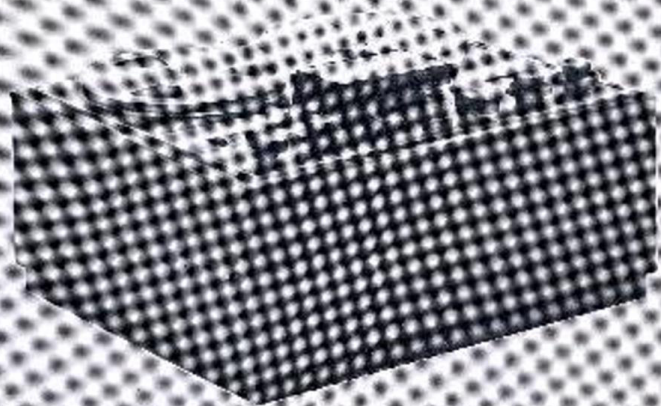
FINE LINE

F-44

SERIES

## Quality Control assures long-lasting Performance

Reliability and durability are important "extra" ingredients that Ampex adds to each F-44 recorder to assure you of continued peak performance year after year. That's why random production line models are dropped, bumped, shook, frozen, cooked, inspected, probed, checked, measured and tested by Ampex's Quality Assurance engineers (an independent group charged with the sole responsibility of maintaining the incomparable Ampex standards of quality).



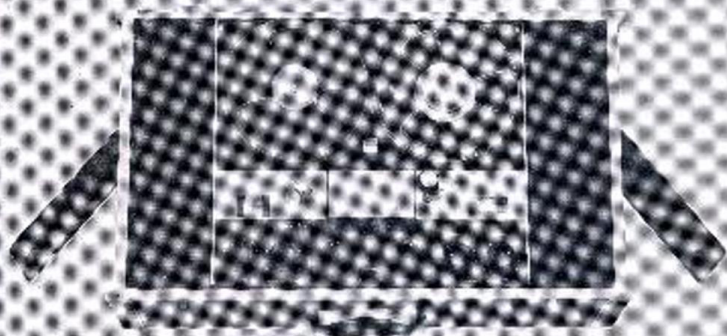
MODEL F-4450 unmounted (Walnut Cabinet optional)



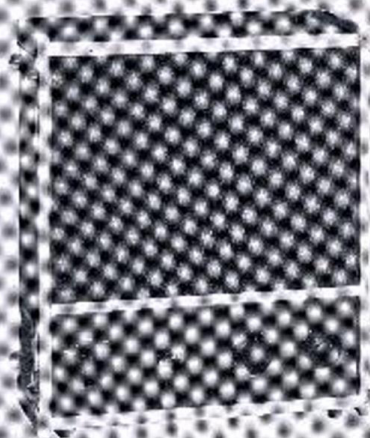
MODEL F-4452 unmounted



MODEL F-4460 Portable



MODEL F-4470 Portable with built-in amplifier & speaker



MODEL 2044 Speaker/Amplifier

## THE AMPEX FINE LINE F-44 SERIES

**Records and Plays** — 4-track stereophonic and 4-track monophonic (also plays ½-track and full-track monophonic)

**Has 2 Speeds** — 7½ ips and 3¾ ips

**Has Separate Heads** — erase, record and playback

**Maintains** — the tradition of excellence that is part of the Ampex name

AMPEX

FINE LINE  
**F-44**  
SERIES

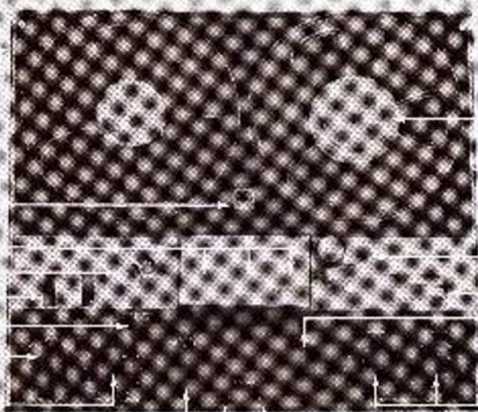
**Model F-4450** Unmounted, with playback volume control, mike inputs on side — for use in custom installation or optional Walnut Cabinet.

**Model F-4452** Unmounted, no playback volume control and mike inputs mounted on top plate — for use in component systems with central volume control.

**Model F-4460** Portable, can be removed from luggage case for custom installation or in optional Walnut Cabinet — for on-the-spot stereo recording.

**Model F-4470** Portable, with built-in dual-channel amplifier and speakers for on-the-spot recording, monitoring and playback.

**Model 2044** Portable, self-contained high fidelity amplifier and speaker system for use with F-44 Series recorders, AM-FM Tuners or as a portable PA system.



## YOUR AMPEX FINE LINE F-44

A few of the F-44's new features that add to your pride of ownership — make it easier to operate — and more fun to use

**New Hysteresis Synchronous Motor (L)** — specially designed for your F-44 — integral, internal fan is dynamically balanced with the rotor for smooth, quiet operation — has babbit bearings, continuous oil feed, needs no oiling under normal conditions.

**Separate Record Level Meters (N)** — indicator needles are close together allowing quick, accurate comparison of both channels.

**New, Compartmentalized Mode-To-Mode Controls** — 2 knobs (I, O) control all transport actions, permit going from one mode to another quickly and safely, no separate stop button — use the same knob to stop a function as you used to start it — electronics can be put into "record" mode without tape in motion (to eliminate bothersome "pop").

**Record Indicator Lights (J)** — one light for each channel for positive indication (to eliminate mistakes in 4-track monophonic recording).

**Master Selector Switch (G)** — permits: simple changes from stereo to mono; choice of individual track; multiple generation sound-on-sound-on-sound (an Ampex F-44 exclusive that lets you add 1 to 2, 1 and 2 to 3, 1, 2, 3 to 4, etc.).

**Level (H)** — playback volume control.

**Exclusive Unattended Shut-Off (M)** — your F-44 can be turned off (manually) while the tape is still playing, when tape is finished, the auto-set shut off turns off motor, electronics and amplifier (when connected to ac receptacle in rear) — also shuts off recorder if tape should break during unattended recording or playback.

**Three, Separate Heads (C)** — selective erase head permits increased monophonic flexibility — precision record head — improved playback head with less winding, heavier gauge wire and new lamination contour for increased reliability — all-metal shielding and narrower channel widths eliminate adjacent channel crosstalk.

**Automatic Tape Take-Up (K)** — eliminates reel threading, simply wind tape around take-up hub.

**Improved Constant-Tape-Tension System (D)** — eliminates head-wearing pressure pads — is optimized for each recorder to provide proper tension without affecting tape.

**Professional Electronics (A)** — with separate record and playback, dual-channel electronics — extra stage of amplification in playback section is optimized for each recorder's own playback head and electronics, is adjustable within 2-volt range for matching component systems, allows for better, longer-life playback head —

cooler operation and longer component life from new solid-state rectifier — 15-amp monitor, micro-switch is good for life of recorder, eliminates electrical current from front of recorder.

**Die-Cast Frame (R)** — extra heavy to eliminate warp — micro-milled for perfect alignment of tape tracking and guidance systems and the head assembly (the exclusive Ampex Fine Line alignment).

**Mike Inputs (Q)** — are on the top of the deck in the new F-4452 model (on the right side on all other models in the F-44 series) for easy access where unmounted unit is to be part of built-in component system — playback volume control is removed and volume is controlled from centralized audio control center of system — also applicable for mounting in new (optional) Walnut Cabinet.

**Built-in Mixer (P, P)** — separate volume controls for recording of 4 inputs (2 mic, 2 line) for professional recording techniques.

**New, Separate Power and Monitor Switch (F)** — switches recorder on and selects monitoring of input.

**Tape Position Indicator (E)**  
7½ and 3¾ IPS Speed Selector (B)

### SPECIFICATIONS: F-44 Series

**PERFORMANCE SPECIFICATIONS:** Ampex guarantees that every Fine Line F-44 Recorder/Player will meet those published specifications... and backs this with the Ampex "4-star" One-Year Warranty. But these standards are minimums only... most F-44 recorder/players will exceed these minimums because each has been optimized to its own individual peak of performance beyond these minimums. Measurements are made by professional equipment standards and instruments.

**RECORDS** 4-track stereophonic/4-track monophonic.

**PLAY** 4-track stereophonic/4-track monophonic, half-track monophonic/full-track monophonic.

**SPEEDS** Records and plays at 7½ and 3¾ ips.

**RECORDING INPUTS (A)** Two high impedance line inputs (pin jacks), 500,000 ohms, requiring approximately 0.15 volts rms for maximum or normal recording level, located on rear of deck. (B) Two high impedance microphone inputs (phone jacks), 2.2 megohms, requiring approximately 0.5 millivolt for maximum normal recording level.

**PLAYBACK OUTPUTS** Approximately 1.0 volts rms from cathode follower when using tapes recorded to maximum normal recording level.

**OVERALL FREQUENCY RESPONSE** Record and Playback — 50-15,000 cps — 2 db at 7½ ips; 50-10,000 cps — +2.4 db at 3¾ ips.

**SIGNAL-TO-NOISE RATIO** Better than 53 db at 7½ ips; better than 48 db at 3¾ ips.

**FLUTTER AND WOW** Under 0.12% rms at 7½ ips; under 0.18% rms at 3¾ ips (measured according to A.S.A. standard 257.1-1954).

**TIMING ACCURACY** ±1.0%.

**HEADS** Manufactured to the same standards of precision that exist in Ampex broadcast and recording studio equipment (see data's on page 4).

In U.S.A., all models are U.L. approved. Models F-4450 and F-4450 are also available in Universal voltage versions, giving selection of nine voltages from 105 volts to 265 volts, 50 cycle.

### SPECIFICATIONS:

#### Model 2044 Amplifier/Speaker

**OVERALL FREQUENCY RESPONSE** 70 cps to better than 13,000 cps, essentially flat acoustically.

**POWER OUTPUT** 10 watts through push-pull amplifier (20 walt peak) with no audible harmonic distortion. Speakers can use full power.

**SPEAKER SYSTEM** Two speakers — an 8" high compliance speaker and horn-type tweeter with a crossover network consisting of: 2 inductors, 3 capacitors, 2 resistors.

	F-4450/4452	F-4460	F-4470	2044
Dimensions	13" x 15" x 17 1/2"	14" x 17 1/2" x 9 1/4"	14" x 24 1/2" x 9 1/4"	14" x 17 1/2" x 9 1/4"
Weight	28 lbs.	35 lbs.	48 lbs.	26 lbs.
Power Requirements	117 V, 105 watts, 50 cps	117 V, 105 watts, 80 cps	117 V, 170 watts, 60 cps	117 V, 55 watts, 60 cps

\* Requires 1/8" above deck, 6/16" below deck.

**AMPEX CORPORATION**  
401 Broadway/Redwood City, Calif.

The Fine Line F-44 Series is manufactured in the United States

© 1963 AMPEX CORPORATION, L.S. NO IN U.S.A. — 1070-8-23  
RECORDER NO. 1669

**AMPEX** "FOUR STAR"  
ONE YEAR  
WARRANTY

All Ampex F-44 Series recorder/players and 2044 Speaker/Amplifiers are covered with full protection on parts for 1 year — your assurance that Ampex backs its reputation for:

- ★ Quality
- ★ Performance
- ★ Reliability
- ★ Leadership

Scans:

<https://archive.org/>