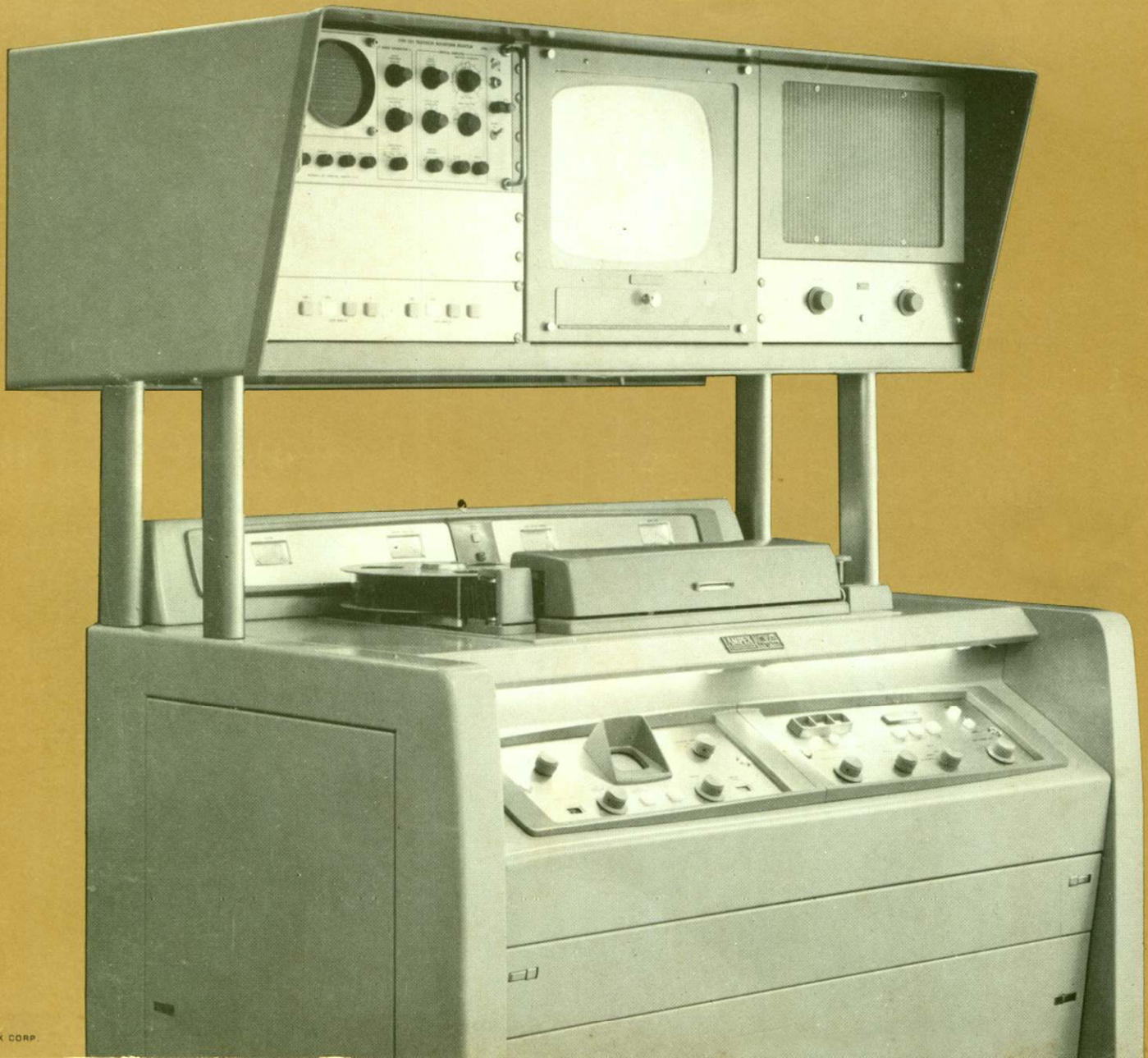




AMPEX
CORPORATION
*professional
products division*

THE NEW AMPEX VR-1000B

ADVANCED DESIGN VIDEOTAPE* TELEVISION RECORDER



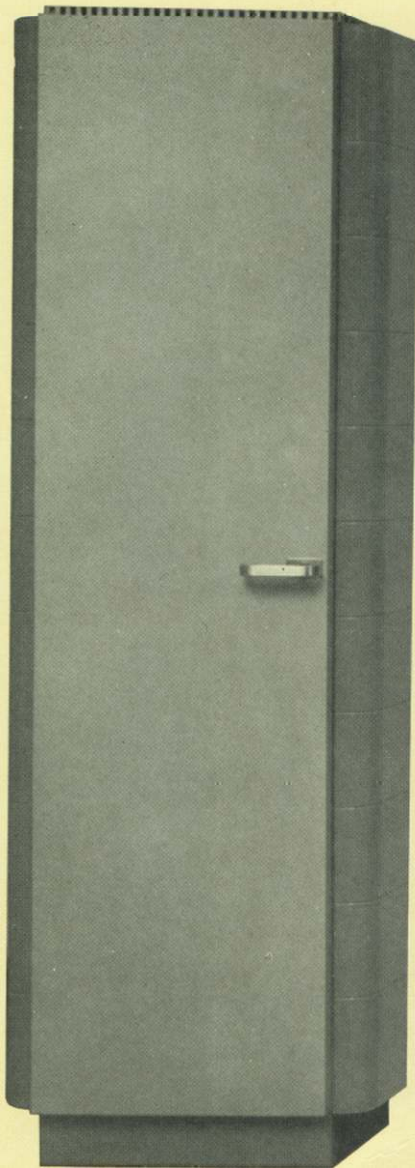
AMPEX VR-1000B

THE ESTABLISHED STANDARD OF EXCELLENCE...

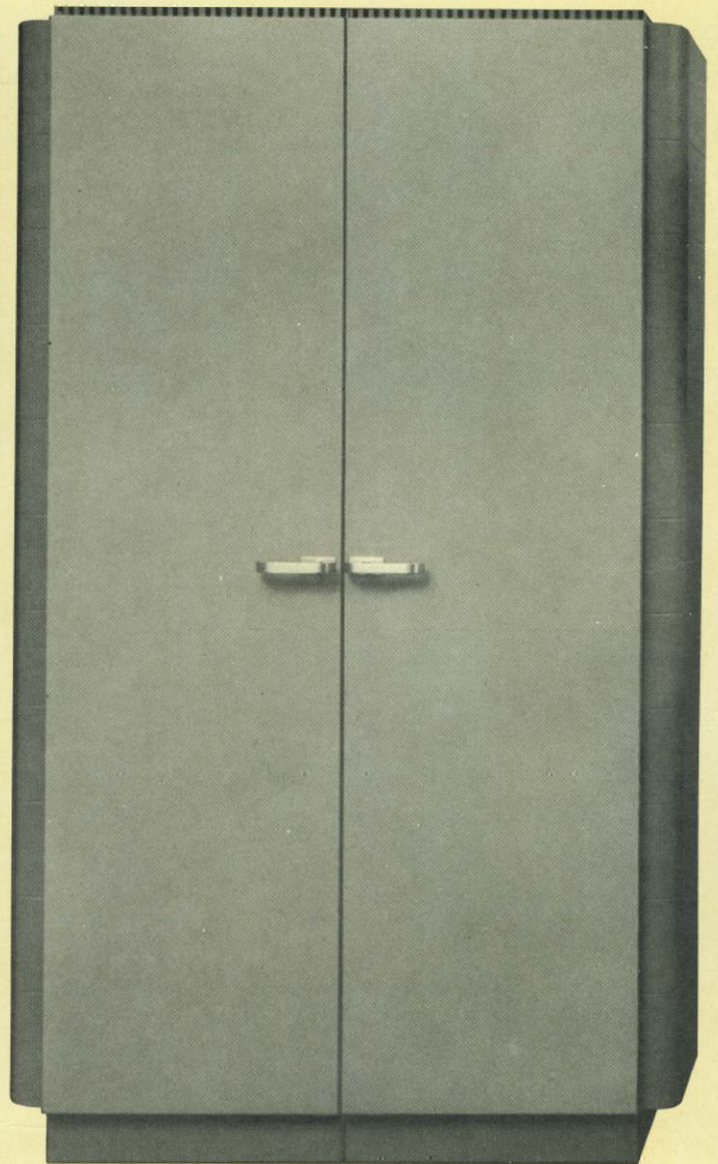
The Ampex VR-1000B sets the new high standard of quality and performance in Videotape television recording. Based on the proven design of the VR-1000, many new features and engineering advances have been added that offer...

- *Highest Efficiency in Operation*
- *Finest Picture Quality*
- *Fastest, Easiest Tape Production*
- *Complete, Accurate Monitoring*
- *Full Accessibility*

The VR-1000B, of course, offers another advantage of tremendous importance... full interchangeability of tapes with the hundreds of Ampex VR-1000 Videotape Television Recorders already in operation in the networks and stations.



COLOR ELECTRONICS



MONOCHROME ELECTRONICS

12 YEARS IN DEVELOPMENT...

Built into the VR-1000B are 12 years of engineering skill and production know-how of the world's largest manufacturer of magnetic tape recorders. Built in, too, are many design features and operating conveniences perfected by Ampex during these years as principal supplier to Broadcasters of audio and video recorders of unsurpassed quality.

1947

Ampex introduced the Model 200—designed for Broadcasters, it was the world's first professional quality tape recorder. As the first in a series that included series 300, 350 and 600, Ampex became the standard of Radio Broadcast and Recording Industry.

1956

Introduction of the world's first and only high-speed tape duplicator.

1956

Ampex invented and introduced the VR-1000 prototype Videotape Television Recorder.

1956

November—13 prototypes of the VR-1000 put into regular service by the networks... first by CBS, then ABC and NBC.

1957

November—First deliveries of production models of the VR-1000 to independent stations and networks.

1958

April—Introduction of the VR-1010 Color Accessory. In service by NBC and CBS by May.

1959

April—Introduction of the international "Interswitch," a modification that permits any VR-1000B to record or playback 525, 625, 405 or 819 line TV systems.*

1959

By August, over 440 Ampex Videotape Television Recorders in operation throughout the world.

This 12 years of experience and know-how in the design of recorders, precision manufacture of heads, electronic circuits, and tape transports have been brought to a new high of perfection in the VR-1000B.



CONSOLE WITH OVER-CONSOLE MONITOR MOUNT



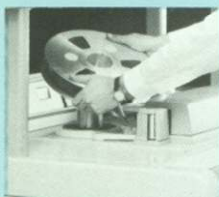
PUSH-BUTTON CONTROLS FOR FAST, POSITIVE ACTION

Fingertip control with push buttons provide instant and positive control of tape transport functions. 12 years of Ampex experience with audio, video and instrumentation recorder users prove strong preference for the sureness and reliability of push-button operation.



EYE LEVEL MONITORING

Video, waveform and audio monitors are at eye level, directly above, or adjacent to, the console (depending on choice of monitor mount: over console or rack). Push-button switching gives the operator instant choice of monitor display without affecting broadcast output. And monitoring equipment can be used on studio lines even when the recorder is not in operation.



EASE OF TAPE HANDLING—SPLICING

Waist high tape deck makes it easy to drop on and lift off large tape reels. Reels lie securely, without locks—and with no danger of their coming loose at high speeds.

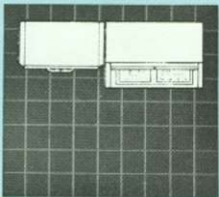
Straight line tape path and automatic tape release make threading easy. Splicing and editing can be done simply and quickly on the

convenient editing shelf that attaches to the console—permits splicing and editing without removing reels...without taking up floor space.



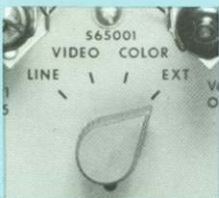
FAST, 2-SECOND START

The Ampex VR-1000B is in stable operation 2 seconds after touching the "play" button. Greatly simplifies program cuing because even a 2-second cue can be handled with assurance of tape being up to stable speed.



SMALL INSTALLATION SPACE

Entire VR-1000B occupies only 19 square feet of floor space—including switching and monitoring racks. Overall length is under 9 feet. Various equipment arrangements are described in the Engineering Department Publication, "Specifications on the Ampex VR-1000B."



INSTANT SWITCHING FROM B/W TO FULL COLOR

The Full Color VR-1000B can be changed from the recording or playback of color to recording or playback of b/w—at the flip of a switch. No adjustments or re-equalization is needed. The Ampex is "ready to go" either way without compromise to either standard.



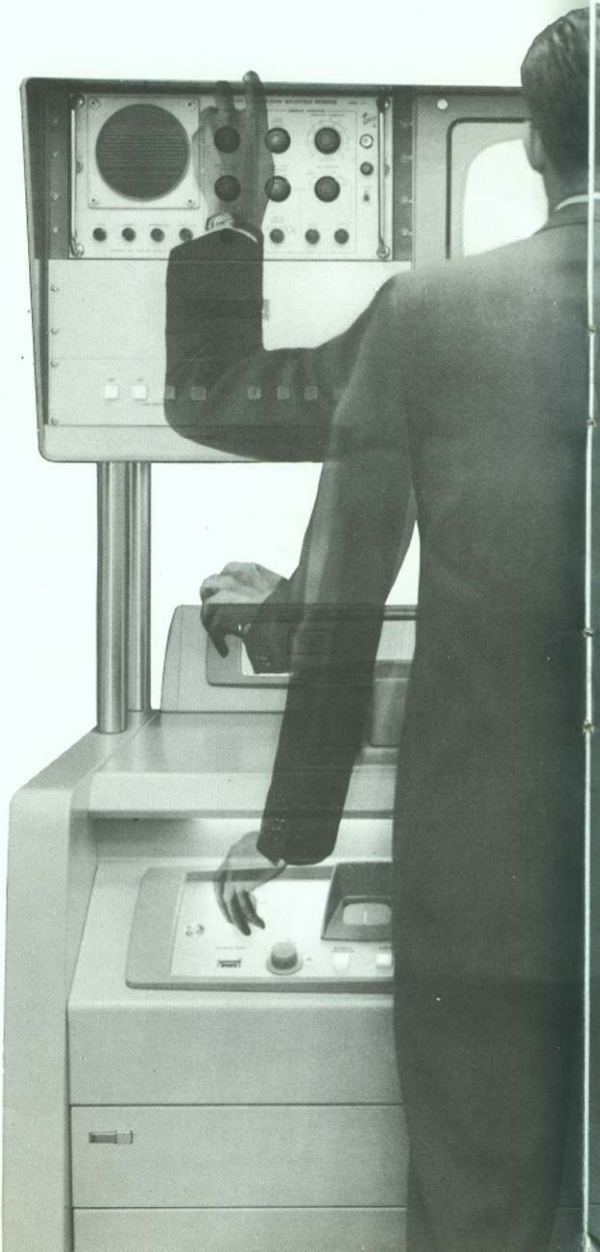
CAN RECORD ANY TELEVISION STANDARD

An exclusive modification called international "Interswitch" permits any Ampex VR-1000 or VR-1000B to record or playback tapes made to every TV standard in the world—525 line, 405 line, 625 line, 819 line. Equips any Ampex for international programming.

HIGHEST OPERATING EFFICIENCY

CONSOLE CONVENIENCE

The exclusive "operator engineered" console design provides table-top convenience where, by standing in one position, the operator controls all recording and playback functions. Hands fall naturally to the controls. Monitoring is at eye level. Waist high tape transport makes it easy to handle large reels of tape...simplifies threading...makes splicing and editing a quick operation...and provides space to set cue sheets, extra reels, etc. Production of programs and commercials moves smoothly and easily—and in playback, operation is simplicity itself.



"... 71% of the operating time of a Videotape Television Recorder is spent in production — recording, reviewing, splicing, editing and dubbing; 29% is spent in broadcasting." (VTR Survey, April, 1959)

SIMPLIFIED PROGRAM CUEING

The Ampex features of **tape timer**, **cue track**, **2-second fast start**, and **push-button controls** combine to provide the operator with quick, positive program cueing. Even a 10-second commercial may be cued with assurance. The desired spot may be located on a reel by the accurate tape timer or by counting "beeps" previously recorded on the cue track when spinning the tape in fast forward. Alternately touching the "Fast Forward" and "Rewind" buttons coasts the reel to the beginning of the spot. The Tape Timer may be set to "zero" and then backed up 2 seconds, 3 seconds, 5 seconds or 7 seconds depending on the station's standard cueing procedures. The fast 2-second start assures that the recorder will be in stable operation.



OPERATION AIDS

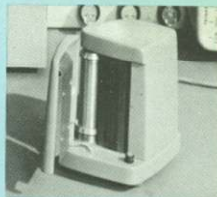
TAPE TIMER

Records tape travel in units of **time**—reading hours, minutes and seconds—which are the normal units in television operation. Accurate to within 5 seconds on an hour's recording—even when run through fast forward or rewind.



FULL WIDTH ERASE

Operates automatically when the Recorder is in the record mode. Guarantees signal-free tape to the recording heads. Highly useful, too, when only portions of a tape need to be erased and re-recorded. Completely shielded—eliminates RF interference to adjacent recorder or other equipment.



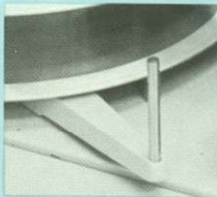
CUE TRACK

This speech quality extra sound track has two important features. A touch of a tone button on the control panel puts an intermittent or continuous 325 cycle tone on the tape. In addition, an audio input permits voice recording on the same cue track for instructing recorder operator or cast, or for editing notes.



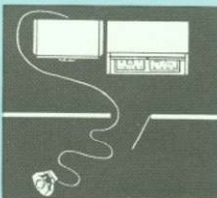
AUTOMATIC BRAKE RELEASE

Greatly simplifies tape handling. Makes it easy for the operator to pull tape free for threading, editing and splicing, avoiding tape stretch or crease.



REMOTE CONTROL

Complete remote control is possible for start, stop, fast forward, rewind, record (total record, audio only, cue only) and cue tone functions. In addition, allows independent setting of video level, sync level and pedestal or blanking level, permitting control of picture quality as well as tape transport functions from a remote position.



TAPE SPEED OVERRIDE

Permits smooth speed up or slow down of one VR-1000B for lip synchronizing with a second Videotape Television Recorder or an external audio recorder.



VIDEOTAPE SPLICER

This proven accessory is precision engineered for fast, perfect splices. Now in regular service by networks and individual stations. (Engineering Department Publication describes the process of splicing in detail.)



MONITORING VIDEO AND AUDIO SIGNALS COMING TO OR LEAVING THE RECORDER

To monitor signals adequately, the monitoring equipment must be capable of better performance than the signal it checks. And in the VR-1000B a Test Center is provided with quality to meet laboratory standards.



AMPEX VIDEO MONITOR

The finest video monitor available (Conrac CM17), provides resolution beyond 600 lines and rigid control over geometric linearity. This permits precise inspection of the grey scale, signal to noise performance and of the geometric accuracy of the picture both in and out of the VR-1000B. Also provided with a switch allowing the operator to select full sized or reduced scale picture sizes.



AMPEX WAVEFORM MONITOR

The finest waveform monitor available (Tektronix 525), provides an exact inspection of the video signals—continuously in the picture circuit it is instantly switchable to compare input and output waveforms.



AMPEX AUDIO MONITOR

The finest available (Ampex Model 9901), it provides for a 40 to 10,000 cycle response (± 2 db) to continually monitor not only the audio signal but as a continuous check on the very low or high frequency sounds heard through quality speaker systems in the home.

With the flexibility provided by the monitor selector panel, these monitoring facilities can be used as a laboratory quality **Test Center**, available for general station duty—whether the VR-1000B is in operation or not.

MODE INDICATION

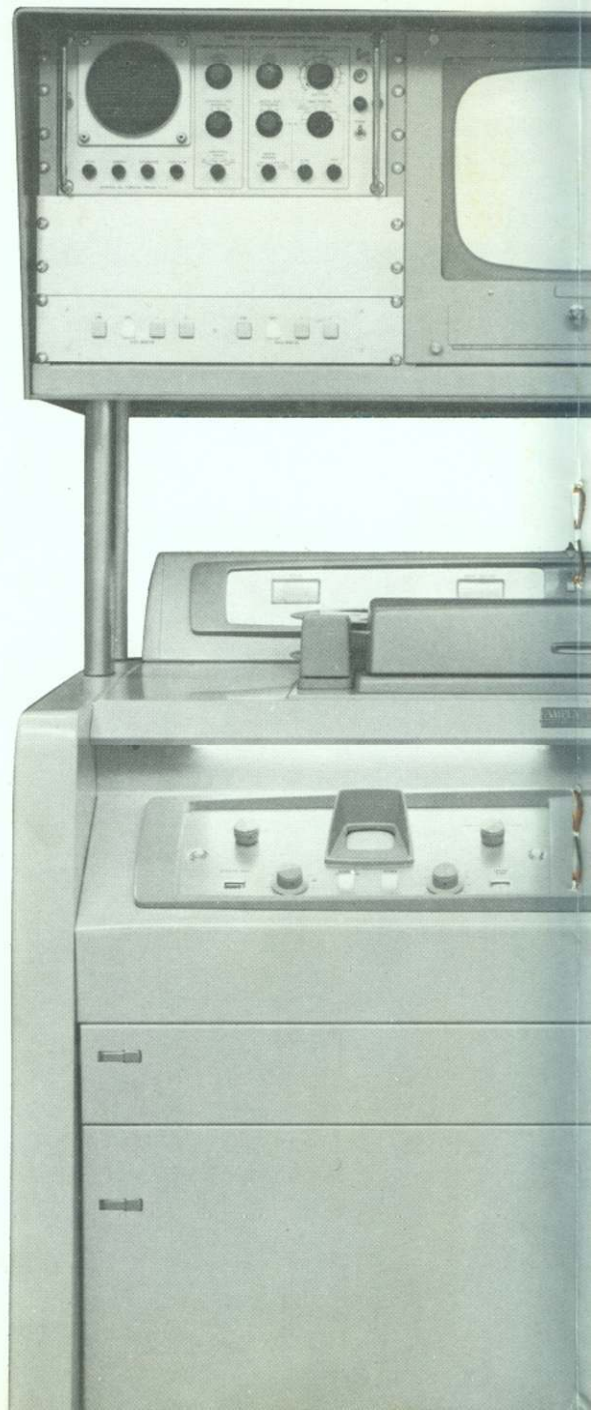
Every mode of the VR-1000B operation is indicated by lights—providing instant visual check even from a distance.

- Lighted buttons indicate whether the VR-1000B is in **record**, (all functions or **audio only**, **cue only**), **play**, **fast forward**, **rewind** or **stop**.
- "On Air" tally light indicates when recorder is in studio or on-air use.
- A red light indicates when the video erase head is in operation.
- A separate red light shows when RF/RF dubbing is in process.
- Lighted buttons indicate the channel selected on the push-button monitor selector panel.
- Four differently colored lights indicate the sync source selected for the servo system.
- A lighted button shows that the Automatic Compensation Feature is in operation.

COMPLETE, ACCURATE MONITORING

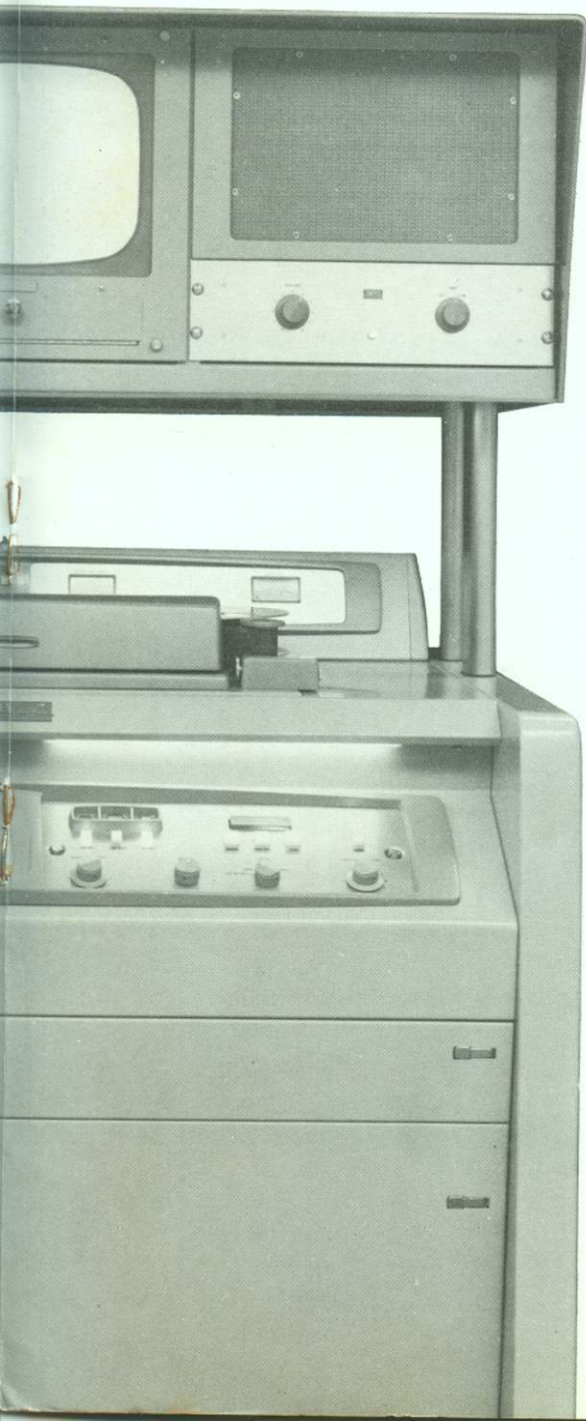
The purposes of monitoring in television recording are to . . .

- *Assure the operator that the Video and Audio signals coming to the recorder meet given quality standards.*
- *Assure the operator that the recorder itself is performing properly.*



- *Assure the operator that the Video and Audio signals leaving the recorder meet given quality standards.*

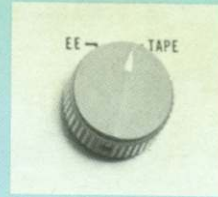
And in the VR-1000B complete, highly accurate monitoring facilities are provided to check each of these functions.



MONITORING PERFORMANCE OF THE AMPEX VR-1000B

OVER-ALL SYSTEM PERFORMANCE

An EE switch on the control panel permits the operator to check the video signal after it passes through the entire record and electronic playback system. Comparison of this signal with playback of a test recording plus a comparison with the incoming signal provides complete assurance that the recorder is functioning properly. This check is made all the more accurate by use of the high quality monitors provided with the VR-1000B.



OVER-ALL SYSTEM STABILITY

During recording operation, an oscilloscope located on the left hand control panel can be used to show over-all system stability. It displays a lissajou loop that combines readings continuously showing the stability of head drum servo, capstan servo, 240 cycle time reference signal and 60 cycle sync source. In addition, each of these functions is metered to indicate individual performance.



FIELD PULSE

During **record** the oscilloscope on the left control panel shows the field pulse signal superimposed on the lissajou loop. This signal is metered from the control track head, as it is put on the tape. A proper indication also assures exact referencing to the video signal.



CONTROL TRACK

A large meter on the rear console panel indicates the level of the control track signal in **record** or **playback** modes (in addition to being shown on the oscilloscope). Complete assurance that the control track signal is going on the tape during **record** is provided by measuring the signal from within the control track head itself.



VIDEO HEAD CURRENT

Large meter on rear control panel of console provides monitoring of signal just prior to being laid on tape, indicates and assures proper current to all four heads. This monitoring point gives maximum assurance that optimum signals are being recorded on tape.



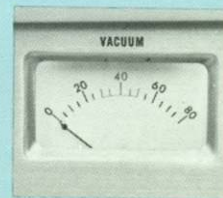
AUDIO SYSTEM SIGNALS

A separate meter on the rear control panel of the console provides continuous readings of recording or playback audio level. In addition erase current, bias current, tone cue, and audio cue levels may be selected for individual readings.



VACUUM SYSTEM

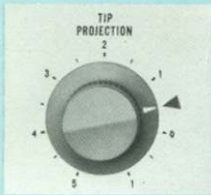
A meter on the rear control panel of the console gives a continuous reading of the level of the vacuum—assurance that the concave tape guide is properly holding the tape at the video record heads.



SIMPLIFIED CHECK-OUT

When the operator goes through a checkout procedure, the design of the VR-1000B makes it easy to pinpoint the circuit, locate the assembly and check its functions. A complete Operating Manual is provided with each Recorder to facilitate this, and it is so thorough that a TV engineer can check out the recorder by exactly following the procedures outlined.

In addition to the manual, pads of check-out sheets are provided which list (1) each sub-assembly, (2) the various functions of the sub-assembly, (3) the various check points within the function, (4) where to adjust or set this function, and (5) desired voltage level at each check point. As is indicated by this check-out sheet, the operator is kept constantly informed of the condition of tubes or other components. In this way, he can expect dependable performance, assigning preventive maintenance to normal "black" time. It should be noted too that all critical check points are measured by built-in meters in each chassis.



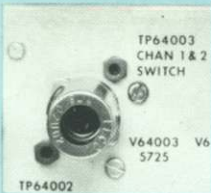
HEAD LIFE INDICATOR

A calibrated ring around the "Tip Projection" control knob on left control panel indicates the remaining operating life of the video head assembly. Reads the amount the video head tips project from the disc in **fractions** of 0.0005 inches.



38-POINT METERING ON HIGH POWER TUBES

4 vertically aligned meters (see left side of rack), plus one in console, instantly show power tube conditions in power supplies and power amplifiers. Voltage and current readings are provided on each tube as well as over-all current reading for the chassis. Two lower meters in rack show capstan and drum servo lock.



IMPROVED SWITCHER AND DEMODULATOR DESIGN

Controls on the switcher have been minimized. Demodulator design has eliminated the need for low-pass filter with its associated controls. Elimination of these adjustments makes it far easier to set up recorder to standard performance.

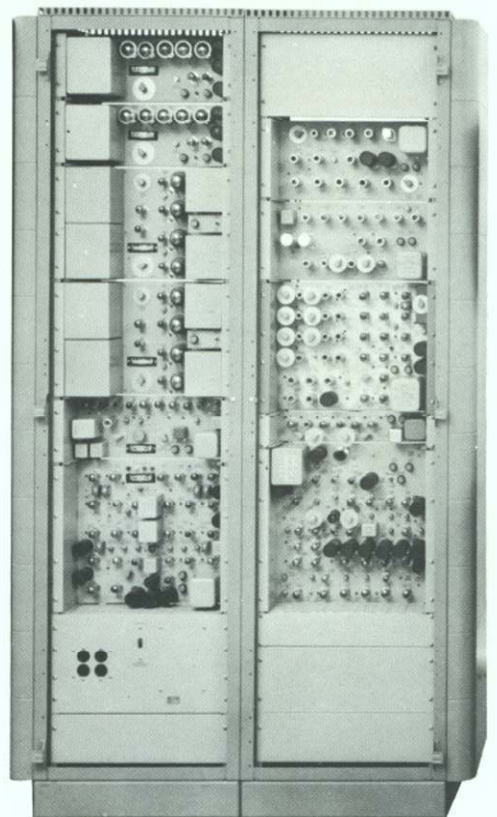


ADJUSTMENT "MEMORY"

A special pointer behind each control knob provides a fixed indication of the original dial setting during subsequent adjustment.

RELIABILITY / DEPENDABILITY

The Ampex VR-1000B is an extremely reliable, stable recorder. Based on the design of the VR-1000, it offers field-proven performance of over 440 installations. These have reported consistently reliable operation, and through accurate monitoring, more than am-



ple indication whenever attention is needed. One of the best indications of this dependability is the fact that *over three-fourths of the Ampex equipped stations own only one recorder.* And they are able to rely on it completely for day-in and day-out operation.

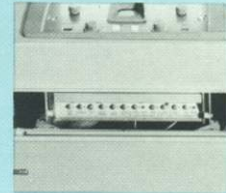


ACCESSIBILITY

To facilitate routine maintenance and check-outs, all functions of the VR-1000B have been made readily accessible . . .

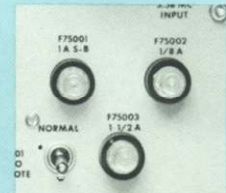
ACCESSIBLE CONTROLS

Controls used by the operator in routine maintenance adjustments are easily reached through the front panels of the console itself.



PROTECTIVE CIRCUITS

Each electronics chassis is equipped with its own protective circuit. A light snaps on in the chassis when it requires the operator's attention.



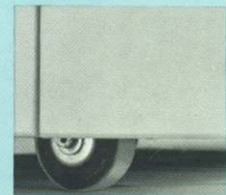
SWING-OUT HARNESES

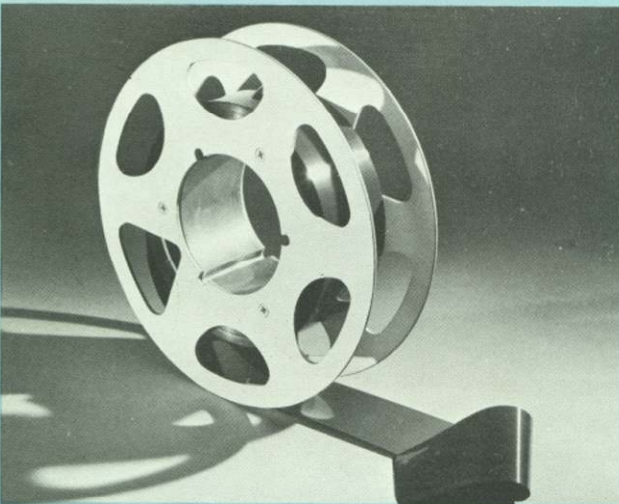
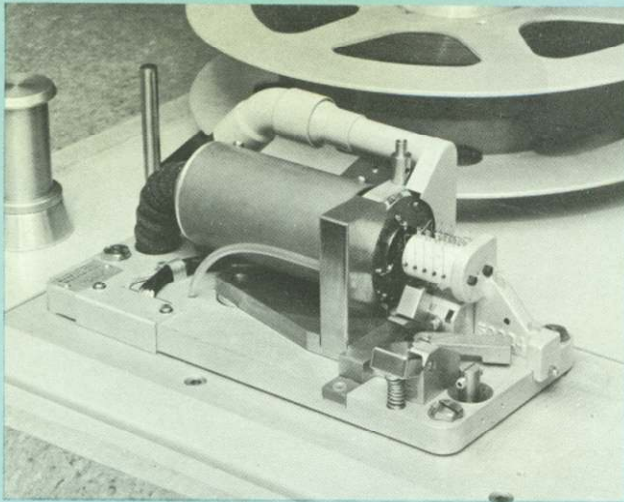
Give instant rear access to racked components without interruption of service.



CONSOLE ACCESSIBILITY

Console, mounted on wheels, rolls out from the wall to provide rear access.





FINEST QUALITY PICTURE

The VR-1000B records and plays back video pictures of unequalled quality . . . the result of Ampex's advanced engineering, exacting tolerance control, and precision manufacturing. Offering better video transmission, it also means finest quality tape duplication.

NEW HIGH SIGNAL-TO-NOISE RATIO

Ampex guarantees a signal-to-noise ratio of 36 db on the VR-1000B **even on interchanged tapes recorded on other Ampex Recorders!** In actual day-to-day operation the signal-to-noise ratio is between 36 and 40 db . . . giving excellent picture resolution, eliminating the graininess or "snow" visible to the eye in monitoring picture areas.

A BENEFIT OF PRECISION TAPE HANDLING

Again, 12 years of Ampex engineering know-how and experience are built into the VR-1000B tape transport. So well designed, so precise mechanically, it permits the electronic circuits to get the highest picture quality out of the tape. And the tape is handled so gently that this fine picture quality is assured even after months of use of a reel of tape.

HIGH QUALITY TAPE DUPLICATES

The VR-1000B makes provision for a low impedance RF-to-RF interconnection between two or more recorders for copying tapes. This permits the playback unit to deliver the Video Signal **frequency modulated** to the copying recorders—avoiding repeated modulation and demodulation processes, and assuring the high quality of even third generation tapes.

FULL INTERCHANGEABILITY

Interchangeability of video tapes, as with audio tapes, is achieved when all recording units are set-up to the same electrical and mechanical standard. Since some of the factors in the "standard" are chosen arbitrarily, the practical day-to-day reference is a standard alignment and test tape which, if closely adhered to, will assure full interchangeability. As in radio broadcast and professional master recording the Ampex standard alignment and test tape brought interchangeability among Ampex professional audio recorders.

Just how important it is that a Videotape Recorder be set to a standard can be seen when you splice one or more short segments into a program or commercial—with the segments made on a different recorder.

In playing back such a composite tape there is no time or opportunity for manual adjustment for each segment. **Tapes must be recorded properly in the first place.**

The Ampex approach to mechanical interchangeability is through **precision factory preset** of all adjustments except those normally under continuous control by the automatic servo systems.

The Ampex approach to electrical interchangeability is through the use of a standard or test tape recorded to practices selected in all-industry standards meetings by the broadcasting industry itself.

TECHNICAL SPECIFICATIONS — AMPEX VR-1000B

I. ELECTRICAL PERFORMANCE

A. VIDEO

FREQUENCY RESPONSE—Monochrome Frequency Response: Uniform within ± 2 db from 20 cycles to 3.6 megacycles and down no more than 4 db at 4.2 mc, with relation to the 100 kilocycle level, measuring sine wave bursts keyed by sync. The horizontal or vertical tilt as measured with a standard window signal is less than 2%. Maintains full specified bandwidth performance at specified S/N ratio. (See below.) Typical day-to-day resolution performance exceeds 350 lines.

Color Frequency Response: ± 1.5 db from 20 cycles to 4.1 megacycles. Full Bandwidth chrominance channel, 1.5 megacycles within ± 1.5 db. Luminance channel ± 1.5 db from 20 cycles to 3 megacycles.

SIGNAL-TO-NOISE—Signal-to-noise Ratio: Monochrome performance better than 36 db, peak-to-peak video to r.m.s. wideband noise, on an interchanged tape basis. (Noise measurement includes unweighted noise components from 100 kc to more than 4.2 m.c.) Typical day-to-day performance as high as 40 db can be realized. Operation of adjacent recorders produces no visible interference in the playback picture. Color performance better than 34 db.

ERASE EFFICIENCY—100 kilocycles erase frequency, synchronized with audio erase and bias frequency, degausses full tape width. Recorded signal attenuation 50 db below peak video signal.

RELATED SPECIFICATIONS—Transient Response: Less than 0.2 microsecond rise time (10% to 90% measured with a 15 kilocycle square wave having a rise time of no less than 0.02 microsecond). Overshoot is less than 7%.

Monochrome Differential Gain: No more than 10% at peak white or black levels, at normal video signal levels, and with input duty cycle of either 10% or 90%; no more than 10% in intermediate range. Measurement by I.R.E. Standard step signal method.

Color Differential Gain: Less than 5%, measured as above.

INPUTS—Program Line: Impedance 75 ohms at 1% or better, unbalanced. Monochrome signals adjustable for levels from 0.5 to 1.4 volts peak-to-peak. Color signals adjustable for levels from 0.5 to 1.0 volts peak-to-peak.

R-F Input: Signal input used for RF-to-RF dubbing operation from another machine. Impedance 75 ohms $\pm 5\%$ unbalanced at a nominal level of 1 volt peak-to-peak.

OUTPUTS—Program Line: Impedance 75 ohms adjustable to 1% or better, unbalanced. Monochrome level adjustable from 0.5 to 1.4 volts peak-to-peak. Color level adjustable from 0.5 to 1.0 volts peak-to-peak.

R-F Output: Tape playback signal before de-modulation (R-F signal after limiting) for use in RF-to-RF dubbing operation to another machine. Impedance 75 ohms $\pm 5\%$ unbalanced at a nominal level of 1 volt peak-to-peak.

MONITORING—Video: Instrument quality 17" picture monitor built for Ampex by Conrac. Model CM17R, featuring low and high voltage regulation, small/large picture selector, selectable d-c restoration. (See Conrac CM17 series specification sheet.) Instrument quality waveform monitor, Tektronix Model 525. (See separate specification sheet, Tektronix Model 525.) Preview switcher, 1 x 4 with illuminated push-buttons, coupled to picture and waveform monitors, for use in monitoring input lines and system output line.

B. PROGRAM AUDIO

FREQUENCY RESPONSE— ± 2 db, 50 to 10,000 cycles/second.

SIGNAL-TO-NOISE RATIO—50 db measured over-all with reference to a recorded level corresponding to 3% total r.m.s. distortion at 400 cycles/second.

ERASE EFFICIENCY—Better than 60 db below peak audio signal.

RELATED SPECIFICATIONS—Flutter and Wow: Less than 0.15% r.m.s. measuring all components from 0 to 200 cycles/second.

Distortion: 1% total r.m.s. at 400 cycles measured at normal operating level, (normal operating level is 6 db below 3% r.m.s. distortion level, or peak recording level).

The VU meter is of A.S.A. Standard ballistics.

INPUTS—300,000 ohm balanced bridge on 500/600 ohm line at -10 dbm minimum level;

or

140,000 ohm unbalanced bridge on 500/600 ohm line at -13 dbm minimum level;

or

150 to 250 ohms nominal microphone input, (transformer can be strapped for 30-50 ohms nominal). Input level as low as 150 microvolts will produce recommended record level.

OUTPUTS—600 ohm balanced or unbalanced, $+8$ VU level. $+4$ VU can also be obtained by strapping. Transformer output is center-tapped.

Unbalanced high impedance monitor output at 1 volt r.m.s. to feed input of unbalanced monitoring amplifier.

MONITOR—Professional quality monitoring system employing 8" speaker with matched enclosure. 10 watt Amplifier, response of $\pm 1/2$ db from 20 cycles to 20,000 cycles; overall acoustic response of ± 5 db from 50 cycles to 10,000 cycles.

Speaker system may be wall mounted, without modification. (Normally mounted in monitor rack.)

C. CUE

FREQUENCY RESPONSE— ± 3 db, 50 to 3,000 cycles/second.

SIGNAL-TO-NOISE—36 db measured with reference to normal operating level.

ERASE EFFICIENCY—Better than 60 db below peak audio signal.

RELATED SPECIFICATIONS—Flutter and Wow: Less than 0.15% r.m.s. measuring all components from 0 to 200 cycles/second.

Distortion: 5% total r.m.s. at 400 cycles measured at normal operating level.

INPUT—10,000 ohm balanced bridging for 600 ohm line, $+8$ VU input level. (Self-contained tone generator (325 cycles $\pm 10\%$) actuated by push-button on console front panel.)

OUTPUT—600 ohm balanced, $+8$ VU level.

II. RECORDING INTERCHANGEABILITY

Recorded tapes are completely interchangeable among heads and machines, provided the machines have been set up with the Ampex Video Standard Reference Tape. This tape is in accord with presently proposed S.M.P.T.E. Recommended Engineering Practice, relating to carrier frequency, clamping and deviation in the recorder FM system.

1. Video Head Life: Guaranteed minimum life of 100 hours of interchangeable recordings with normal routine maintenance. Ampex video head assembly replacement policy provides for rapid service on an exchange basis.

2. Video Channel-Horizontal Stability: Well within F.C.C. Standards of Good Engineering Practice, III, A, 3.687a (8).

3. Vertical Line Displacements: Horizontal displacements of vertical picture elements do not exceed 0.05 microsecond ($\pm 1/64$ inch on 21-inch screen).

4. Signal Track Standard: All recorded signal track specifications, with respect to positioning, spacing and widths, are in accordance with Standards currently proposed by S.M.P.T.E. to A.S.A.

5. Playback Timing: Synchronous with system timing reference.

6. Picture-Sound Separation: $18\frac{1}{2}$ frames, sound leads.

7. Color Frequency Standard: The color system includes a precision Color Sub-Carrier generator.

III. TAPE HANDLING

TAPE TIMER—Resetttable tape-passage indicator, calibrated in hours, minutes and seconds. Directly driven by tape motion in all modes of operation. Timing accuracy is better than $\pm 0.14\%$ in all modes of operation, providing accuracy of better than ± 5 seconds in an hour length of tape, regardless of cycling through normal Fast Forward and Rewind operations.

TAPE SPEED OVERRIDE—The normal 15"/second tape speed in Play mode is variable by $\pm 15\%$ for precise sound synchronization of two Videotape Television Recorders.

REMOTE CONTROL—Any part or all of the following operating functions may be controlled remotely: Play, Stop, Fast Forward, Rewind, Record, Audio Only, Audio Normal, Cue Only, Cue Normal, Cue Tone, Video Level, Sync Level, and "Set-up". Remote connections and required control circuit and tally light voltage source (24 v.d.c) are provided on barrier strip terminals in the back of the racks.

STARTING TIME—Guaranteed 2 sec. for stabilized operation.

STOPPING TIME—Less than 3 inches of tape in record or playback mode.

SHUTTLING SPEED—Manipulation of Fast Forward and Rewind push-buttons allows speeds from 0 to 300" per second.

REWIND TIME—Approximately $4\frac{1}{2}$ minutes for a 7,200 ft. reel (96 minute reel). Rewind speed averages 300" per second, giving a 20:1 ratio.

TAPE SPEED—15 inches-per-second in normal record or reproduce mode.

TAPE SAFETY FEATURES—Automatic cut-off switch halts tape motion at end of reel.

All transport controls are interlocked against simultaneous engagement of conflicting functions.

Supply and take-up turnable brakes are automatically disengaged during threading or splicing operations, permitting easy "pull-out" of tape.

Factory specified tape tensions far below elastic limits of tape.

IV. TAPE MEDIUM

Magnetic tape, 2 inches wide, "Mylar" base of 0.001-inch thick, in accordance with standard proposed by S.M.P.T.E. to A.S.A. American Standard (Proposed VTR 16.2-393).

REEL TYPE—In accordance with standards proposed by S.M.P.T.E. to A.S.A.

REEL SIZE—Recorder meets specifications while handling tape up to 14-inch diameter (7200 feet playing 96 minutes).

V. PHYSICAL AND POWER

PHYSICAL CHARACTERISTICS

DIMENSIONS—The MONOCHROME SYSTEM is comprised of one console and two EIA standard racks plus monitoring facilities housed in third rack or over-console horizontal monitor rack. Conversion to color system requires one additional rack. Console dimensions $34\frac{3}{4}$ " deep, 55" wide, 42" high. See VR-1000B Installation Criteria for complete details.

POWER REQUIREMENTS

MONOCHROME SYSTEM—117-0-117 volts, 60 cycle single phase, three wire, 4 kva maximum. Voltage tolerance, each leg, 105-125. Load distribution: less than 25 amperes per leg. For color, 5 kva maximum, load distribution less than 30 amperes per leg.

THE VR-1000B OFFERS YOU...

FINEST QUALITY PICTURE

- Superior picture through tape handling accuracy
- New high signal-to-noise ratio
- Highest quality tape duplicates
- Full interchangeability

HIGHEST OPERATING EFFICIENCY

- With console convenience
- Fast, positive push-button controls
- Convenient eye level monitoring
- Complete cuing facilities
- Quick 2-second start
- Waist high tape handling ease
- Quick, simple splicing and editing
- Instant switching from b/w to full color
- With modification, can be switched to record any of the international television standards
- Tape timer
- Full width erase
- Cue track
- Automatic brake release
- Remote control
- Tape speed override

COMPLETE, ACCURATE MONITORING

- All signals accurately monitored coming to and leaving the Recorder by:
 - Ampex Video Monitor (Conrac CM17)
 - Ampex Waveform Monitor
- Performance of the recorder and system accurately monitored including:
 - Over-all system performance
 - Over-all system stability
 - Control track
 - Field pulse
 - Video head current
 - Audio system signals
 - Vacuum system
- All of the operating modes indicated by lights

RELIABILITY / DEPENDABILITY

- Simplified checkout with such aids as:
 - Head life indicator
 - 38-point metering of high power tubes
 - Adjustable dial-setting "memory" devices
 - Improved switcher and demodulator design
- Maximum accessibility:
 - Of the electronic racks
 - Of swing-out terminal harness assemblies
 - Of protective circuits
 - Of console adjustment controls

AMPEX SERVICES

- Station personnel training program
- Installation services
- One year service supervision policy
- Complete local merchandising program
- Continuing information service

AMPEX SERVICES

Complete, free-of-charge customer service program starts at the time an Ampex VR-1000B is purchased. It includes factory training of operating personnel, installation service, 1 year service supervision policy, and continues on through merchandising aids and advertising support.

TRAINING PROGRAM

Station personnel who are to operate the Recorder will be trained for one week at the Ampex Factory. Training periods are held twice each month. Trainees should arrange to complete the course a week before the equipment is delivered to permit ample time for planning interconnection with the station system.

INSTALLATION SERVICES

When the VR-1000B arrives an Ampex Field Engineer, a specialist in Videotape television recording, will assist in the installation and check-out of the equipment. An important call is made 30 to 60 days after installation. At this time, the Ampex engineer answers all questions, studies operating records, and provides additional training for station personnel.

ONE YEAR SERVICE SUPERVISION POLICY

Five nationwide field engineering offices will furnish service supervision for one year free of any cost to the customer.

MERCHANDISING PROGRAM

VR-1000 equipped stations participate in a continuing national and local merchandising program—identifying and merchandising the TV tape services you offer—and motivating advertisers and agencies to seek out these services.

An important part of this program is "Pattern for Profits," a tested and proven merchandising kit designed for station use in announcing, demonstrating, and selling their TV tape services. It contains everything needed for a complete direct mail, advertising, and demonstration campaign, and is designed to gain maximum benefit from all national advertising, promotion and publicity through local tie-in.

INFORMATION SERVICE

Ampex provides a continuing video information service—in the form of brochures, engineering department bulletins, reports—based on knowledge gained from engineering, user experience, surveys, etc. In this way the accumulated technical, operating and application experience of all VR-1000 equipped stations is available to your staff. Current publications and information include:

"The Ampex VR-1000"

A basic brochure oriented to station management and semi-technical personnel, explains the basic operation of the Videotape Television Recorder—and discusses its advantages to station operation. (12 pages)

"For Those Who Want More"

The dollars and cents of Videotape Television Recording—based on the experiences of owners. Excellent for management, the sales manager and the program manager. (10 pages)

Success Stories

A package of case histories that tell, in detail, how television stations are successfully using the Ampex VR-1000 in daily operation. Mostly non-technical. In addition, a comprehensive file of magazine article reprints on television recording is maintained.

"Advanced Applications"

Tells the basic story of closed circuit applications of the Ampex Videotape Television Recorder, in government, industry, and education. Of interest to anyone looking beyond regular telecasting operations.

Engineering Department Publications

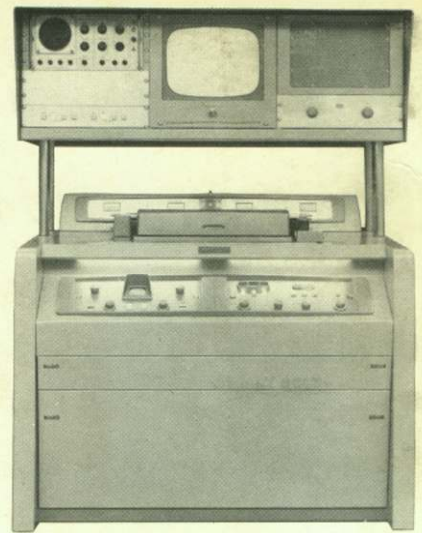
For the engineer, these cover all technical aspects of Videotape recording... one each available on (a) The Ampex Videotape Television Recorder, (b) Color Conversion, (c) Editing and Splicing.

"Tape One!"

For agencies and station customers this 16-page brochure explains the use of "live" TV for advertising. In addition, a separate insert is available showing a photographic story of a taped commercial.

AMPEX WORLD LEADER IN PRECISION MAGNETIC TAPE RECORDING INSTRUMENTS

Ampex Precision Magnetic Tape Recorders are in service throughout the world... in Television and Radio Broadcasting Stations, Professional Recording Studios, Scientific and Guided Missile Installations and in Stereophonic Music Systems for the Home.



VIDEOTAPE TELEVISION RECORDER

Invented by Ampex, this is the only production tape recorder designed to handle both black and white and color television. Over 440 in operation throughout the world.



MODEL 601 Portable Magnetic Tape Recorder

First professional quality portable. Lightweight and compact, it is widely used by radio and television broadcast industries, professional recorders, and serious high fidelity enthusiasts.



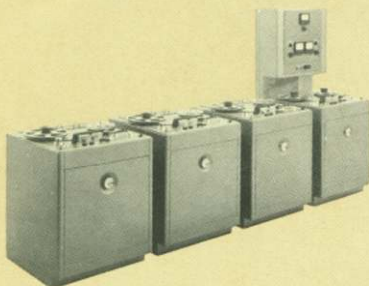
SERIES 351 Magnetic Tape Recorder

First choice of the radio broadcasting industry, it provides flexibility with the utmost in reliability and convenience.



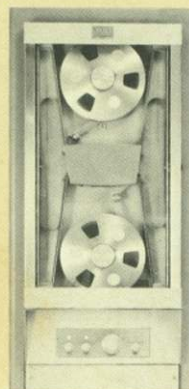
SERIES 300 Magnetic Tape Recorders

The standard of the master recording industry. Major customers include all networks as well as Capitol, Columbia, Decca and RCA Victor record companies.



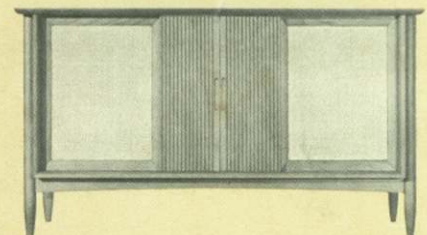
MODEL 3200 Tape Duplicator

The only commercially available high speed tape duplicator in the world. Produces all the stereophonic recorded tapes from such companies as Capitol, Columbia, Decca and RCA Victor.



FR-300 Recorders For Data and Control

Another major Ampex division makes a broad line of tape recorders for engineering, scientific and business data. Photo shows an FR-300 digital tape handler.



FOR THE HOME

Ampex makes a wide variety of stereophonic tape recorders for home Hi-Fi installation. Available in consoles, portables and modular units for custom sound systems.

Twelfth Year of Leadership



934 CHARTER STREET, REDWOOD CITY, CALIFORNIA

Offices and Representatives in Principal Cities Throughout the World