

tape recording

EXCLUSIVE
FIRST LOOK-
THE 1969
RECORDERS

THE SOUNDS OF HEMISFAIR



T210 R-571
MR ROY FERRIN
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RUTHERFORD N J 07070

1/14/69

The average embarrassed non-technical music-loving layman's clip-and-save INSTANT GUIDE TO RECORDING TAPE



Does that shiny new tape recorder you got for a gift have you buffaloed? Do you panic at the terms like acetate tapes, Mylar tapes, tempered Mylar tapes, standard-play tapes, longer-recording tapes, double-length tapes, triple-time tapes, low-print tapes, low-noise tapes, and inches-per-second? Here's how to stop trembling and start taping. A complete course in four easy, step-by-step lessons... plus a clearly marked paragraph of advertising from the makers of Audiotape.

Lesson 1. The Basic Question— Acetate or Mylar Base?

When you record something, you are magnetizing microscopic particles of iron oxide. If you don't know what iron oxide is, don't worry. Just bear in mind that the particles have to be attached to something or they will blow away, so they are coated onto plastic tape. This base tape can be either acetate or Mylar. Choice of base does not affect fidelity of sound, so why a choice? To save you money and trouble.

Acetate gives you economy. It's not as rugged as Mylar, but professional recording studios prefer it and use it almost exclusively. You may prefer it too.

Mylar* gives you mileage. It survives for years even in deserts and jungles (if you're taping tribal chants, you'll want Mylar). Mylar tapes also can be made exceedingly thin, which means a reel can hold more feet for a longer, uninterrupted program.

Tempering overcomes Mylar's tendency to stretch under stress, and is used for the thinnest, most expensive tapes (the next lesson takes you painlessly through thick and thin). *DuPont's registered trade mark for its polyester film.

Lesson 2. Standard-Play, Longer-Recording, Double-Length, Triple-Time.

Instead of "Play," "Recording," "Length" or "Time," think of "Thickness." Picture a tape-reel 7 inches in diameter. It will hold 1200 feet of standard-recording tape (acetate or Mylar)... 1800 feet of longer-recording tape (considerably thinner acetate or Mylar)... 2400 feet of double-recording tape (still thinner Mylar). Easy, isn't it? Now move on to:

Lesson 3. Which Speed to Record At.

| RECORDING TIME PER TRACK: ONE DIRECTION (IN MINUTES) | | | | |
|---|----------|----------|----------|----------|
| TAPE SPEED | 1200 FT. | 1800 FT. | 2400 FT. | 3600 FT. |
| 1 7/8 | 128 | 192 | 256 | 384 |
| 3 3/4 | 64 | 96 | 128 | 192 |
| 7 1/2 | 32 | 48 | 64 | 96 |
| 15 | 16 | 24 | 32 | 48 |

Your tape recorder probably allows you to record at several different speeds (you, by the way, are a recordist; only your machine is a recorder). What's the reason for this smorgasbord of speeds? The faster the speed, the higher the fidelity; the slower the speed, the more playing time per foot and per dollar.

- 15 ips (inches-per-second). Commercial recording companies use this speed when they tape your favorite performer for later transfer to records. Forget it.
- 7 1/2 ips is what you need for really good hi-fi music at home, and for the clearest reproduction of speech (foreign-language homework, sound-tracks for home movies, cocktail-party capers). An 1800-foot reel will play for 45 minutes—the length of a long-play record.
- 3 3/4 ips is fine for background music and for most speech applications—dictating to your secretary and recording baby's first words. An 1800-foot reel will play for an hour and a half.
- 1 7/8 ips is a businesslike speed without hi-fi frills. Good for taping conferences at the office because it puts a lot of words on a single reel. An 1800-foot reel will play for three hours.
- 15/16 ips is not recommended for anything but continuous monitoring. An 1800-foot reel will play for 6 full hours. Unless you do wire-tapping, you are probably not in the market for 15/16 ips and you're ready to try this:

Tricky Test Question.

Q: How do you get longer playing time per reel of tape?

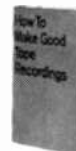
A: You can do it in either of two ways. (1) At slow speed. The tape plays longer but sound fidelity is reduced. (2) On thin tape. You get more footage per reel but it costs proportionately more. (To put it another way, the same recording job can cost you a dime or a dollar, depending on the method you select. If you're clear in that, you've earned your diploma.)

Lesson 4 Post-Graduate Course.

Experienced tape recordists, with ears and equipment that are ultra-sensitive, can sometimes hear "echoes" caused by "print-through." Think of it as a leakage of sound from layer to layer when very thin tape is wound on the reel. When you achieve that kind of expertise, you'll want special "low-print" coatings... as well as "low-noise" coatings which eliminate the barely perceptible tape-hiss that only the most expensive amplifiers can pick up anyway.

Advertising Paragraph.

Now that you feel like an expert, you'll want the brand of tape that's used by experts because it's made by experts. Its name is Audiotape. It's made by the people who supply tape for recording studios, corporate computers, Cape Kennedy countdowns and automobile stereo cartridges. It's made in the full range of acetate/longer-recording/double-length/triple-time/low-print/low-noise. It's made better. Ask anybody who knows. They'll tell you to ask for Audiotape.



How To Make Good Tape Recordings.
150 pages packed with easy-to-understand tips. Regularly \$1.50. Yours for 25¢ or the end tab from reel of Audiotape (7-inch size). Audio Devices, Inc., Dept. TR, 235 East 42nd Street, New York 10017.



Make the intelligent switch to the newest idea in tape recording. The TDC33.

Once again Harman-Kardon has pioneered a totally new concept in home entertainment equipment. The TDC33 is the *first* combination receiver/tape deck ever made. What we've done is combined our superb 60 watt Nocturne solid state stereo receiver with our professional TD3 three-head stereo tape deck in a handsome compact walnut enclosure. Now, for the first time, all of the music you could want is right at your fingertips. You can tape music off the air in stereo at the flip of a switch. Add a turntable and you can tape records as easily as you play them. Use micro-

phones and you can quickly and easily create an exciting stereo tape library from "live" sound sources.

The Intelligent Switch

The TDC33 fills an important gap for people who now own outdated vacuum tube high fidelity equipment. If you're one of those people who has considered converting your system to solid state, the TDC33 is the ideal product for you. You probably own a record playing device and speakers. Simply replace your old tube preamplifier, amplifier, FM tuner or receiver with the TDC33. You'll not only have an extraordi-

nary solid state receiver, but a professional quality tape deck as well.

The TDC33 employs the latest solid state technology including a MOSFET front end and integrated circuits. It will pull in FM stations you didn't even know were on the dial with unprecedented clarity and fidelity. The tape deck used in the TDC33 features die cast metal frame construction to insure critical alignment of moving parts, a one micron gap playback head that permits extended response beyond the range found in conventional tape decks, and double permalloy shielding that allows im-

proved stereophonic separation throughout the entire audio range.

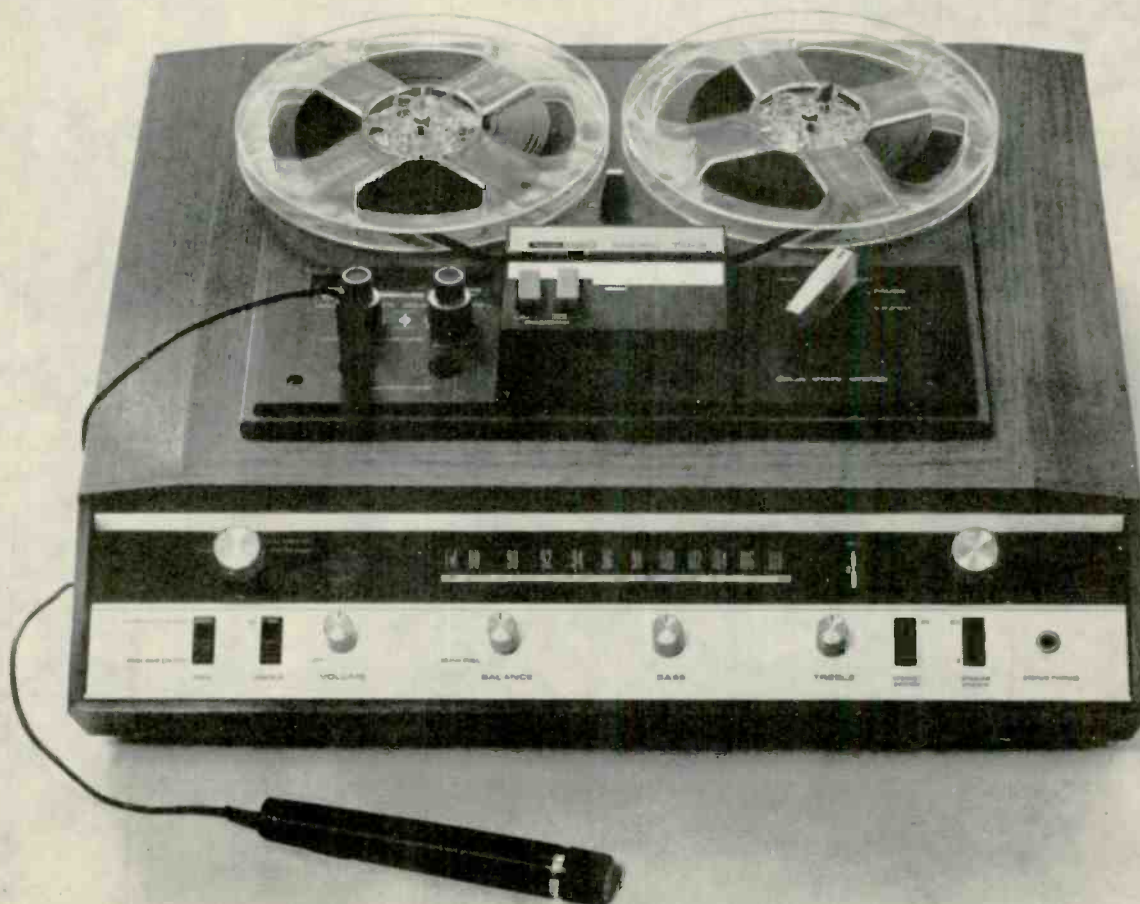
In sum, the TDC33 represents a bold new idea in home entertainment equipment—the control center for a complete solid state home music system *plus* a totally versatile home recording studio. All in one compact package.

We suggest you see and hear it soon.

For more information write: Harman-Kardon, Inc., 55 Ames Court, Plainview, N.Y. 11803, Dept. **TRM-2**

harman kardon

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Bell & Howell has made it harder to choose a fine stereo tape recorder.

Until now, it was easier, because all the choices were about the same.

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They do more than play beautifully. They do more than record faithfully.

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They have three-way Auto-Reverse for continuous listening.

They have instant-pause and audible search. Source input mixing and sound-with-sound. Two VU meters which are live in both play and record.

They have specs like: 4 speeds (7½, 3¾, 1⅞, 1¼); wow and flutter: .09% @ 7½; frequency response: 40 Hz to 17,000 Hz (± 3db) @ 7½; SN ratio: better than -51Db; crosstalk: -40Db; power: 30 watts E.I.A. peak music power.

They come in five models. Three are portables with built-in twin speakers and 2 dynamic omni-directional microphones.

(Highest-quality external speakers are also available.) Two are deck versions.

They all have three-way Auto-Reverse with Bell & Howell's exclusive reversing head design for positive track alignment. Three models have Autoload® completely automatic threading.

They're designed with the kind of care and precision Bell & Howell's built its reputation on for more than 60 years.

When you come right down to it, maybe we haven't made choosing a fine stereo tape recorder harder at all.

Maybe we've made it much easier.



TAPE PRODUCTS DIVISION

 BELL & HOWELL

tape

recording

JULY-AUG, 1968

VOLUME 15, NO. 6

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When your mood is for the deep, satisfying pleasure that only music, perfectly performed, can give you, it's time to play your Garrard automatic turntable. You can relax completely with a Garrard ... you know you are getting the utmost in reproduction quality, smooth, trouble-free performance, and safety for your records. And with the SL 95 Automatic Transcription Turntable, above, considered the finest recording unit in the world, you also get synchronous speed that cannot vary to distort the sound under any condition. You even relax when the music's over, for the Garrard Power-Matic Base, shown here, shuts off the entire component system when the last record is played.

The SL 95 is \$129.50, less base and cartridge; Power-Matic Base, \$15.95. Seven other fine Garrard models from \$37.50.

For a complimentary Comparator Guide to all models, write Garrard, Westbury, N.Y. 11590.

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tape

NOTES

Ever get bolloxed up on the phone with someone who gives you a very complicated set of directions on how to drive to their house? Your not-taking pencil never seems to move fast enough, and when the moment of truth arrives, your co-pilot (the wife) can't decipher your hurried scrawl in the poor light in the car. If you're driving alone, the situation is absolutely impossible.

At last, a cure for this perennial problem—a tape recorder! If you have a battery portable, put it to good use with a telephone pickup coil, and get every last detail of the directions down on the tape. When you're driving, play short bits of the tape in the car as you hit the appropriate guideposts. If something's not crystal-clear, rewind a few feet and replay it. You'll find that your friend's directions contain a wealth of information about landmarks and other details that you would never normally write down as part of your crib sheet. The exactness of the detail is so complete, that you almost feel as though you're traveling familiar ground, which indeed it will be after just one run-through with the tape-recorded directions.

If you have a problem with not enough signal level for your telephone recording, insert a preamplifier in the line between the telephone pickup and the recorder. This will give you lots of signal for a crisp, clean recording that will

The first stereo cassette playback deck

sound better on playback than the phone conversation itself.—W.G.S.

Novels are being spun off by the mile at Faribault, Minnesota these days. So are technical books, fiction and fact magazines and instructional materials. Words by the yard are being recorded on magnetic tapes at the rate of 15 inches per second. The taped books then are mailed to blind or visually handicapped persons throughout Minnesota, North and South Dakota.

The program is carried on as an added service of the regional library for the blind at Faribault, under the direction of Librarian Miss Esther Reineke. It is made possible through an annual appropriation provided by Congress, which allows the Division for the Blind Library of Congress, to provide this free service through 31 such centers across the nation, from New York to Hawaii.

The taping service supplements the Braille and Talking Books section which have been carried on for years, and from which go out about a ton of material daily from Faribault. This regional center stocks over 60,000 cartons of Talking Books and about 7500 braille volumes. Tapes are lighter and easier to handle, and require a lot less space. But in spite of this, the demand is growing so that library workers are calling for more elbow room.

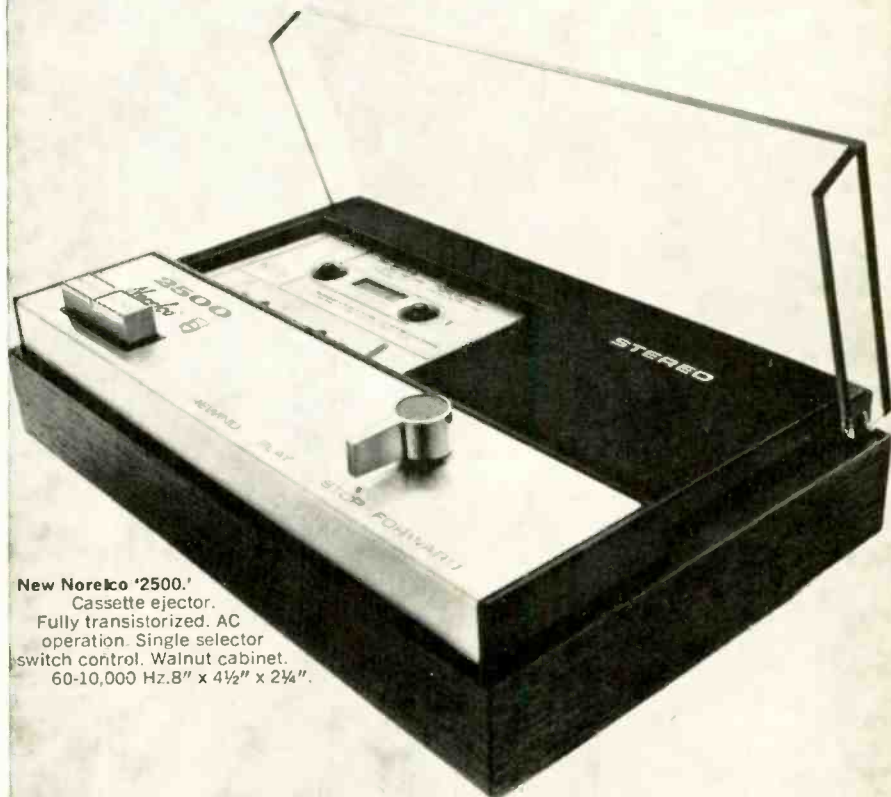
All tapes are wound into 7-inch reels. It requires four reels, on the average, for a typical novel. By patching, the library can make at one time three copies from a master, or they may record three tapes from three different masters. The library staff is kept busy on a fulltime basis. So are sighted readers who make the tapes. About 90 per cent of the masters are recorded by volunteers, many of them in prisons.

—H. Woody Bailey

And under \$60.00, too.

Just plug the Norelco '2500' into your existing system—console or component—and you can enjoy prerecorded cassettes, too.

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60-10,000 Hz. 8" x 4½" x 2¼".

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hundreds of titles from some of the world's biggest catalogs. For example, members of the Variety Tape Club will be offered "specials" featuring their favorite recording artists and music at discounts ranging up to 70 per cent. As a member, you can buy as many, or as few, tapes as you like — at any time! *You are never obligated to buy anything.* Satisfaction is guaranteed.

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I would like a free six-month membership in the Variety Tape Club. Please send free catalog and bulletin listing current "specials".

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Tape Recording

FM MEANS FREE MUSIC

If you had the September issue of *FM Guide*, a good FM stereo receiver, a stereo tape recorder and at least 175 miles of blank tape, you could have recorded about one quarter of the selections listed in that one issue of *FM Guide*.

But let's assume you're only interested in programs that list tape times —

The September *FM Guide* lists 850 separate programs, playing over 1500 selections — 860 hours — with tape times for every selection.

Assuming \$5.00 is a reasonable price for a one hour recording, this adds up to over \$4,000 worth of free music.

And that's just one-twelfth of what's available to you each year as a subscriber to *FM Guide*.

As the writer, Irwin Bagley, said in *Tape Recording Annual Buying Guide*, January, 1967: "Musically, FM offers you an even wider choice than records do. Many FM stations carry live stereocasts of concerts, often combining singers, soloists and conductors that could never appear together on discs because of conflicting record contracts. The entire Boston and New York Philharmonic series are aired regularly in stereo. So are some of the leading music festivals of Europe, including the Florence May

Festival, the Salzburg and Bath Festivals, as well as others. It's not uncommon to hear a tenor who records exclusively for London singing a duet with a soprano who belongs to Angel, accompanied by an orchestra and conductor who record exclusively for RCA Victor. Besides, there are some purists who claim that a broadcast of a festival performance has more immediacy and excitement than a studio recording (although it may lack the perfection of a pre-recorded tape.)

"Besides, taking music off the air is markedly cheaper than buying records. Even at discount prices, a classical stereo disc on a major label is apt to cost you upwards of four dollars; but an hour's worth of stereo (recorded on a four-track machine at 3 $\frac{3}{4}$ ips) comes to only \$1.50 even when you use the best tape. Another important factor is the flexibility of your investment. If you find that you tire of a piece after several hearings, you can erase it and use the same tape for another broadcast."

FM Guide costs just \$7.00 per year. Subscribe *now* and we'll send you a reprint of Mr. Bagley's excellent article which offers valuable tips on how to record this wealth of material. This article will describe in detail the not-too-great-a-trick (if you don't already know) of how to tape this great reservoir of good music, good talk, etc. It will even tell you how to tape the audio portion of your TV set.

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First
Look
At The
1969
Recorders

As fall approaches, tape recorder manufacturers begin taking the wraps off their 1969 models. On the pages which follow, TAPE RECORDING will present the first public look at some of this season's new models. Included are the first videotape recorder to incorporate a high quality stereo recorder (or vice versa, if you prefer); the first home recorder incorporating the Dolby noise reduction system, the first "high fidelity" cassette deck and a variety of cassette recorders.

A glance at the new models and prices shows that many feature more rugged or simplified construction at no increase in price, while others offer more features for the same dollar as last year's models—in other words, generally better value. Despite the popularity of cartridge systems, there's no shortage of new reel recorders in the medium and upper price categories.

The new models include such familiar names as Ampex, Norelco, Wollensak, Roberts, Concord and others—and there are such relative newcomers as Nivico, Bell & Howell, KLH and others.



AMPEX: Micro 22 cassette outfit includes Micro 12 cassette recorder/player, leatherette case with built-in speaker, AC adapter, earphone, dynamic microphone. Weighs five pounds, sells for \$89.50.



ARVIN: Model 30171-1K, stereo cassette tape recorder, list priced at \$179.95.

Features: Separate volume and tone controls for both speaker channels, push buttons for all functions, automatic load/unload functions, cassette release button, pilot light, erase system, record interlock to prevent accidental erasing, two auxiliary inputs and five microphone jacks, outputs for stereo headphones and tape counter with automatic reset, AD-1 speaker enclosures.

Specs: Capstan drive for 1½ ips speed, weight 10 lbs.



CONCORD, Los Angeles: Model F-98, cassette portable tape recorder for professional use, list priced under \$120.

Features: High-power amplifier and acoustically matched speaker, built-in dynamic remote control microphone with a separate microphone input for conference recording, selectable automatic or manual record level control, VU recording level meter, tone control cassette ejector, digital tape counter, all push-button operation, monitoring while recording, battery and house current operation with automatic battery disconnect on AC, internal storage for two tape cassettes, servo drive motor with electronic speed control and Concord flux-field heads.

Specs: Weight eight pounds, one hour and a half maximum playing and recording time.

NEW PRODUCTS



CONCORD, Los Angeles: Model F-95, AM cassette radiocorder for AM radio listening, off-the-air recording and tape playing, list priced under \$100.

Features: Automatic record level control, built-in superheterody mechanism, tone control, acoustically matched speaker and cassette ejector.

Specs: Weighs five pounds.



CONCORD, Los Angeles: Model F-50, dual power cassette portable recorder, list priced under \$60.

Features: Automatic record level control, Concord flux-field recording/playback head, servo type drive motor with electronic speed regulation, automatic disconnect of batteries when on house current, earphone, uses standard C-60 and C-90 cassettes.

Specs: Runs at 1 7/8 ips, frequency response of 60 to 10,000 Hz, wow and flutter less than 0.3 per cent rms.



PANASONIC, New York City: Model RE-7060, cassette recorder and FM/AM radio, list priced at \$249.95.

Features: Continuous tone control of treble-bass balance for stereo separation, built-in stereo indicator light when tuned to FM stereo station, slide-rule tuning with a "black-out" glass panel face, microphone, 6 1/2 inch dynamic speakers housed in separate cabinets, blank tape cassette included.

Specs: 32 transistors, 15 diodes, weight 25 lbs, 9 ozs.



CONCORD, Los Angeles: Model F-400, cassette portable stereo tape recorder, list priced under \$180.

Features: Built-in high power stereo amplifiers and acoustically matched stereo speaker system, can be operated as a tape deck for off-the-air and stereo phonograph recording, automatic record level control, separate volume and tone controls for each channel, two lighted VU meters, push-button cassette tape transport mechanism, cassette ejector, digital tape counter, stereo headphone output and outputs for optional matching extension speakers.

Specs: Operates on both batteries and house current with automatic battery disconnect on AC, weight 11 lbs.



CRAIG, Los Angeles: Model 6402 helical-scan video tape recorder, list priced at \$1200.

Features: Full-field, slant-track, two head frequency modulated recording system; all-electronic rotary

transformer head assembly—eliminating hard to clean mechanical brushes and slip-rings, audio re-record capability for re-recording sound track without disturbing the video portion, automatic audio and video level controls, built-in 2:1 sync generator providing electronic editing techniques, slow motion fixed at 1/12th normal speed and stop motion for reproduction of any single field of video information, slanted tape deck for the supply reel eliminating idler assemblies and inclined tape guides usually required to achieve helical scanning techniques and adding further mechanical simplicity by feeding tape in direct alignment to the drum, minimizing tape tension and extending tape and head life.

Specs: Utilizes ½-inch magnetic tape at 9½ ips for maximum 50 or 60 minute recording or playback time on either seven or eight and a half inch reels, weight 59 lbs.



CROWN, San Francisco, Calif.: Model CTR 9650S, cassette mono portable tape recorder, list priced at \$119.95.

Features: Recording with attache case closed if desired, automatic level control, digital tape counter, tape repeater which repeats 15-second spot recordings, four-inch speaker, tone and volume controls, AC pilot light, storage space for three cassettes, dynamic microphone and small accessories included.

Spec: Frequency response of 100 to 10,000 Hz, output power of 1000 MW, weight 8½ lbs.

NEW PRODUCTS



CROWN, San Francisco: Model SHC 51/FM 500, compact stereo cassette tape deck, FM/AM tuner and stereo amplifier, list priced at \$299.95.

Features: Two omnidirectional mikes, direct taping from FM/AM tuner, walnut case, two JCSP seven-inch optional stereo speakers baffled and individually tuned with 20 watt capacity each (list priced at \$69.95), AC push button operation.

Specs: One and a half hours playing time, 30 watt output power, frequency response 30 to 20,000 Hz, weight 29 lbs.



NIVICO Model 1684 solid state four-track stereo tape deck operates at 7½ or 3¼ ips, handles 7" reels, comes with built-in preamplifier. Dual VU meters and single knob function control simplify operation. Unit contains a headphone output on the front of the panel. Inputs and outputs for both DIN and pin jack connectors, and both types of cables supplied. Recorder also comes with full and empty tape reels, dust cover and wood base.



NIVICO Model 1711 solid state two-speed tape recorder with two-way recording system. Mono unit features VU meter, tone and volume controls, tape speeds of 3¼ and 1½ ips, five-inch reel capacity and the ability to record in either direction of tape travel. Amplifier output rated at 2 watts. Features include automatic volume control, three-digit tape counter, 3" x 6" oval speaker, complete accessories and leatherette styling.



HITACHI, Long Island City, N. Y.: Model TRQ-710, seven-inch reel mono tape recorder, suggested list price \$99.95.

Features: High-level and low-level high impedance inputs for recording from radio or high fidelity amplifier, or from dynamic microphone (supplied), automatic sound-level control of microphone for avoiding overload distortion, level indicator, tape counter, outputs for monitoring and for extension speaker, vertical or horizontal use.

Specs: Operates at 7½, 3¾ and 1½ ips speeds, uses standard at 3¾ ips, seven-inch reels, output power 2.5 Watts, frequency response of 50 to 15,000 at 7½ ips and 50 to 9,500 Hz at 1½ ips, 22 lbs.

Features: Plays through a hi fi system's amplifiers and speakers and through its own preamplifier/equalizers, push-button function control, special line and microphone inputs and preamplifier outputs, VU meters, tape counter vertical or horizontal operation.

Specs: Operates at 7½, 3¾ and 1½ ips, uses up to seven inch reels, (either four-track stereo or two-track mono), frequency response of 50 to 15,000 and 50 to 9,500 Hz, weighs 21 lbs.



HITACHI, Long Island City, N. Y.: Model TRQ-717, four-track stereo and two-track mono tape recorder, suggested list price \$179.95.

Features: Automatic input level control, professional VU meters, swing-out speaker lids which act as deflectors for stereo separation, automatic input mixing control, pause control, separate tone controls for each channel, vertical or horizontal use.

Specs: Operates at 7½, 3¾ and 1½ ips, uses standard seven-inch reels, maximum output power per channel of 2.5 Watts, frequency response of 50 to 15,000 Hz at 3¾ ips and 50 to 9,500 Hz at 1½ ips, 25 lbs.



HITACHI, Long Island City, N. Y.: Model TRQ-727, four-track and two-track mono stereo tape deck, list priced at \$149.95.

NEW PRODUCTS



PANASONIC, New York City: Model RS 763S, reel-to-reel stereo record and playback tape recorder and Fm/Am stereo radio, list priced at \$429.95.

Features: Motor driven automatic tuning, FET tuning, possibility of listening while recording, four speaker system with two 6½ inch woofers and two 2½ inch tweeters, sound-on-sound, sound-with-sound, twin VU meters, automatic shut-off, fast forward and pause control, distant-local sensitivity switch, separate bass and treble controls, four-position digital counter, balance meter, stereo indicator light.

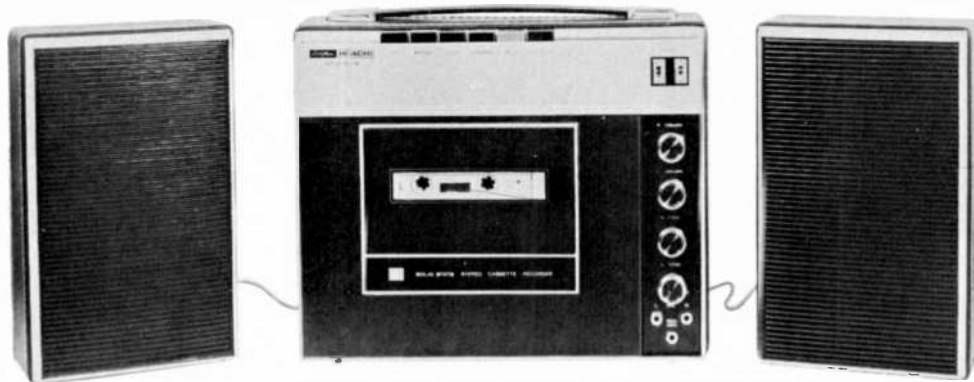
Specs: Frequency response 30 to 18,000 at 7½ ips, 30 to 13,000 at 3¾ ips, 30 to 6,000 at 1½ ips, takes seven inch reel, 36 transistors, 27 diodes, weight 46½ lbs.



CONCORD F-400 cassette recorder weighs 11 lb., records and plays back in stereo or mono. It operates on batteries or AC, features built-in stereo amplifiers and acoustically matched stereo speaker system. It can also be used as a tape deck for recording or playback with a conventional high fidelity music system. Unit has two lighted VU meters, separate volume and tone controls for each channel, cassette ejector, headphone output.



BELL & HOWELL Filmosound 8 cassette recorder is heart of new 8 mm home movie system. Recorder can be synchronized with movie camera or projector or can be used independently as conventional cassette mono recorder. With case and microphone, it lists for \$99.95. Manufacturer claims frequency response of 90-9,000 cps \pm 3 db, automatic-manual volume control for recording, audio level meter and battery checker, push button operation.



HITACHI, Long Island City, N. Y.: Model TRQ-222 four-track stereo cassette tape recorder, suggested retail price, \$129.95.

Features: Two wide-range five-inch speakers swinging out or detaching for stereophonic separation—closed they form a protective lid, levelmatic control in the recording circuit, tone controls, pause control, remote control recording, cassette ejection pushbutton.

Specs: Power of 1.5 watts, frequency response 50 to 10,000, weighs 11.7 lbs.



WOLLENSAK: Model 4000, monaural cassette recorder, list priced at \$54.95.

Features: Pushbutton controls, VU meter for record level setting and battery life indication, accepts an AC adapter-batter charger, microphone with remote start-stop switch, microphone pouch, recorder carrying strap.

Specs: Operates on five 1.5 volt "C" cells, constant speed capstan and AC bias and erase.



KINEMATIX, Chicago: Model 1000, eight-track stereo/mono tape cartridge recorder.

Features: Plays and records both stereo and monaural automatically, shuts off automatically after the fourth stereo channel or eighth monaural channel, 200 minutes of material can be put on a standard 90 minute eight-track cartridge, separate VU meters and volume controls for playback, microphones, designed to play through any home entertainment system which has audio input channels.

Specs: Twelve inches by 4½ inches by 9¾ inches.

NEW PRODUCTS



PANASONIC, New York City: Model RS-796, stereo tape deck, list priced at \$249.95.

Features: Dual capstan drive to eliminate audible wow or flutter, continuous automatic reverse, records and plays in both directions, four tape heads, two VU meters, four position digital tape counter, pause control, sound-on-sound, sound-with-sound, automatic shut off, vertical or horizontal operation. Specs: Frequency response at 7½ ips 30 to 20,000 Hz, at 3¾ ips 30 to 13,000, at 1½ ips 30 to 6,000, weight 38 lbs.



PANASONIC, New York City: Model RE-7080, FM/AM stereo radio, four-track record and playback stereo cassette tape recorder, list priced at \$349.95.

Features: Motor driven automatic tuning, twin cabinets housing six speakers, motional feedback system for smooth frequency response, built-in stereo light for tuning into stereo FM stations, separate bass and treble controls, "blackout" face and exclusive roto tuning, microphone and blank cassette included.

Specs: 45 transistors, 23 diodes.



NIVICO Model 1224 offers three-speed four-track operation with stereo record and playback in either forward or reverse mode. According to manufacturer, the 1224 delivers 20 watts' peak power, with a frequency response of 30-18,000 cps at 7½ ips. Matching speaker enclosures incorporate 6½" woofer and 3" tweeter in oiled walnut enclosures. Recorder has automatic repeat feature and automatic stop as well as auto tape lifter when recorder is in fast forward or reverse; dual VU meters, pause control, four-digit tape counter. Accessories include full and empty 7" tape reels, twin microphones with stands and two patch cords. Sound-on-sound and sound-with-sound are incorporated. Single-knob control simplifies volume, bass and treble controls. Price, not available at press time, includes two speaker systems.



RHEEM ROBERTS, Los Angeles: Model 1000 compact combination video and stereo four-track tape recorder, list priced under \$1,000.

Features: Records and plays back pictures and sound on $\frac{1}{4}$ -inch recording tape, push button selection for audio operation or VTR operation, all ferrite heads (erase, playback, record and two for Video), hysteresis synchronous three-speed motor for capstan drive, two six-pole eddy current out-rotor motors for supply and take-up reel drive and one for video operation, sensing tape reverse on audio, remote controllable automatic stop, four-digit index counter with reset button, VU meters, stereo headphone jack, M-type receptacle for TV camera, DIN jack (with selector switch for high and low input), vertical and horizontal operation, TV monitor and camera available.

Specs: For VTR operation: NTSC TV signal, tape speed of $11\frac{1}{4}$ ips, $\frac{1}{4}$ -inch magnetic tape, seven-inch reel size (max), recording time 37 minutes, 200 lines resolution, signal-to-noise ratio of 40 db, 1.4 V p-p (sync. negative) 75 ohm, audio signal band width of 100 cps to 10 K cps. For audio operation: two tape speeds of $7\frac{1}{2}$ and $3\frac{3}{4}$ ips, wow and flutter of less than 0.05 percent at $7\frac{1}{2}$ ips and at $3\frac{3}{4}$ less than 0.08 percent, frequency response 30 to 18,000 Hz plus or minus 3 db at $3\frac{3}{4}$ ips, distortion within 1.5 percent 1,000 cps O VU, signal-to-noise ratio better than 50 db. recording bias frequency of 100 K cps, weight 66 lbs.

NEW PRODUCTS



PANASONIC, New York City: Model RQ-210S, portable, miniature cassette tape recorder, list priced at \$125.00

Features: Pop-up cassette cartridge, full range 2½ inch dynamic speaker, automatic recording level control, VU/battery level meter and simple lever operation, remote pencil microphone with stand, takes cassette C-60, earphone, carrying case, and wrist strap.

Specs: Frequency response at 1½ ips is 50 to 10,000, weight 2½ lbs., takes four Panasonic Hi-Top "AA" batteries.



SONY, Sun Valley, Calif.: Model 666D three motor four-track stereo tape deck, list priced at less than \$575.

Features: Noise reduction system (SNR) and automatic tape reverse (ESP) combined for the first time

in one unit, SNR circuit providing noise-free playback of all recorded tapes by automatically reducing the gain of the playback amplifier during quiet passages when background noise is most predominant, two high torque spooling motors and a capstan drive motor, push button operation, two VU meters for professional recording level control, stereo headphone jack, a scrape flutter filter (idler mechanism that eliminates tape modulation distortion), ultra high frequency bias, vertical/horizontal operation, pause control and four-digit tape counter, non-magnetizing heads, automatic tape lifter to protect heads during fast forward and rewind operations, record interlock.

Specs: Operates at 7½ and 3¾ ips, frequency response 20 to 22,000 Hz at 7½ ips and 20 to 15,000 Hz at 3¾ ips, wow and flutter of 0.09 percent at 7½ ips and 0.15 percent at 3¾ ips, signal-to-noise ratio 53 db with SNR switched off up to 59 db with SNR switched on, reel sizes up to seven inches.



TANDBERG, Pelham, N.Y.: Models 11-1 and 11-2, battery operated, full track (Model 11-1) and half-track (Model 11-2), both list priced at \$449.50.

Features: Servo-type speed control built-in mixer and limiter, seven inch reel capacity, Cannon microphone input, three-speed DC motor.

Specs: Response of both models at 7½ ips 40 to 16,000 Hz plus or minus 2 db, signal-to-noise ratio at 7½ ips is better than 56 db, and distortion is less than 0.5%, both operate on 10 D cell or Nicad rechargeable batteries, seven-inch reel capacity.



MARTEL, Model 4400, professional stereo portable tape recorder list priced at \$450.

Features: Four tape speeds, $\frac{1}{8}$, $1\frac{1}{2}$, $3\frac{3}{4}$, $7\frac{1}{2}$ ips; when extended record and playback time is required, all four tracks can be used monaurally at $\frac{1}{8}$ ips with long play tape to give the user $25\frac{1}{2}$ hours per reel.

Specs: 25 transistors, 5 diodes, powered by a number of different type batteries, six and 12 Volt auto cable, 110-250 V AC power supply, capstan drive, input facilities for microphone, radio, and phonograph, weight 8 lbs.



TEAC, Santa Monica, California: Model A-7030, stereo tape deck, list priced at \$740.50.

Features: Reel capacity of $10\frac{1}{2}$ inches, cueing control during fast forward and rewind operation, instant stop remote features option, adjustable tape tension for various reel sizes, specially designed motor for stable tape travel and accurate tape speeds, three stage direct coupled amplifiers, for sound quality and minimal distortion, fully transistorized, two VU meters, four heads— $\frac{1}{2}$ track and $\frac{3}{4}$ track switchable.

Specs: Speeds of 15 ips and $7\frac{1}{2}$ ips (+ or - 0.5%), wow and flutter of 0.06% at 15 ips and 0.08% at $7\frac{1}{2}$ ips, signal-to-noise ratio of 55 db.



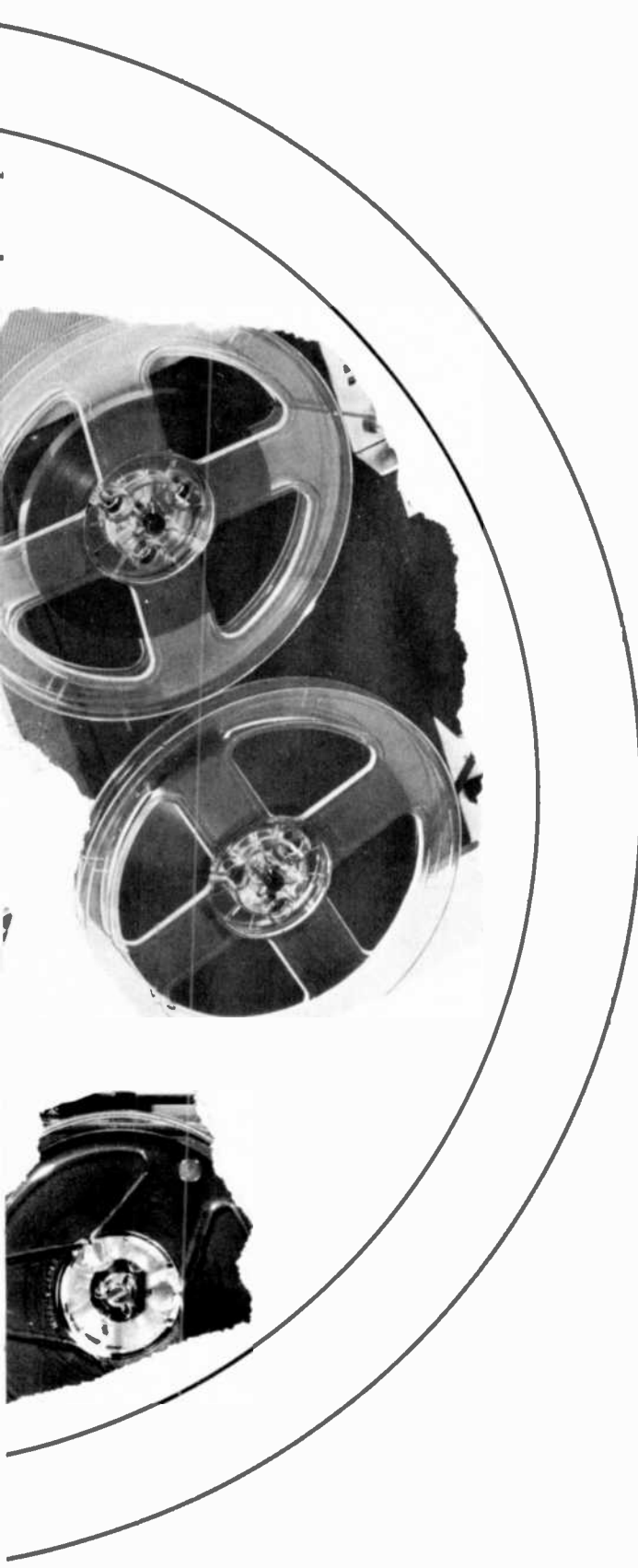
TEAC, Santa Monica, Calif.: Model A-2050, four-track stereo tape deck, list priced at \$349.50.

Features: Foil sensing automatic reverse and playback, pause button, four digit counter, three $\frac{1}{4}$ -track stereo heads, two VU meters.

Specs: Frequency response at $7\frac{1}{2}$ ips 30 to 20,000 Hz, at $3\frac{3}{4}$ ips 30 to 15,000 Hz and at $1\frac{1}{2}$ ips 40 to 7,000 Hz; wow and flutter at $7\frac{1}{2}$ ips 0.12 percent, at $3\frac{3}{4}$, 0.15 percent and at $1\frac{1}{2}$, 0.20 percent; signal-to-noise ratio of 50 db.

1 Mono
Recorder
+ 1 Manual
Slide
Projector
= Simplified
Slide Show

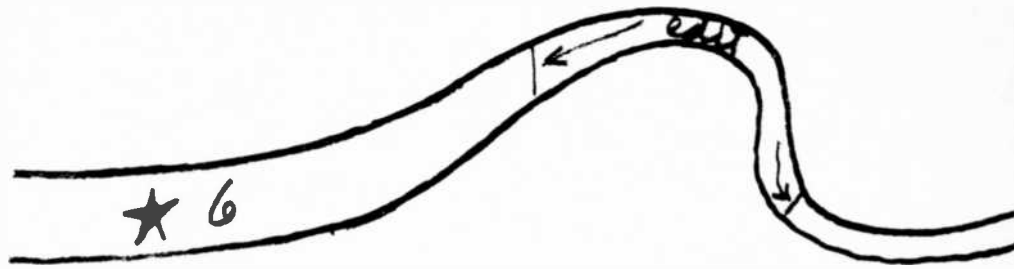




by I. D. Cotterman

So you think you have a lot of expensive equipment and do a lot of hard work to put on a successful slide show. Hah! I'll show you how you can do it with a minimum of equipment, no need for technical knowledge and very little effort. You don't have to have a stereo tape recorder, an automatic slide projector with programmer, or a mixer. There's no monotonous chime or buzzer to tell you when to change slides. All you need are a good mono tape recorder, a reading lamp, a manually-operated projector, a turntable with an amplifier and a stop watch plus a newly-developed recording tape. Here's how you do it.

Arrange your slides in the order in which you want to show them. A slide sorter will help, but you don't absolutely need it. If you expect to use more than one tray of slides in your show, try to arrange them so that any sequence ends with the last slide in the tray. In that way the break comes between sequences and your continuity isn't affected.



Write your commentary on file cards, one for each slide, or on a sheet of paper double spaced, numbered according to the slide the commentary refers to. Read each numbered commentary over several times, timing yourself with the stop watch. Mark on your card or sheet the number of seconds or minutes you take for each slide together with the footage of tape you'll need (this depends on the recording speed you select—a given time interval takes twice as much tape at $7\frac{1}{2}$ ips as at $3\frac{3}{4}$ ips).

Next, prepare a cue sheet along the lines shown on page 45 noting on it where the commentary or music is to be recorded and the signal dots go. Note the different headings on the Cue Sheet: *Change* means the time required to work the projector mechanism when changing slides. While the change is going on the tape is passing the recorder head. If you record at $3\frac{3}{4}$ ips and it takes you two seconds to change slides, for example, some $7\frac{1}{2}$ inches of tape will pass the recorder head, which has to be allowed for on each slide change. If your projector allows you to change slides in a shorter time than two seconds, use the shorter time and footage. *Throw* is the time taken between switching on your recorder and the time you start making your commentary. If it take $1\frac{3}{8}$ seconds, some $5\frac{1}{4}$ " of tape have passed the recorder head. You don't always have to worry about this, as we'll see later on. *View* is the time your audience takes to see a slide properly. *Voice* indicates your narration.

The key to the system is a tape newly developed by the American Tape division of Bell & Howell. Called Write-on Tape, it's a polyester-based recording tape, available in 1 mil thicknesses in standard lengths up to 1800 feet. One side of the tape is coated with iron oxide. The back of the tape, normally shiny, is coated with a white substance on which you can write with a grease pencil or ball-point pen.

Let's take a look at a sample slide show. You'll probably want to use background music, including

a musical introduction. I usually allow about 30 seconds of music before the first slide comes on the screen, to give guests time to get comfortable. If you're going to spread your opening music over several slides, like a club membership slide, a title slide, a credit slide and a route map if you're showing a travelogue, you divide the music into as many intervals as there are slides and indicate each interval with a signal on the tape itself. Instead of using aluminum foil strips, which can gum up a tape recorder or render a reel of tape useless for anything else, I use the write-on tape—simply use a red ball-point pen to make a big red star at each interval. There are no lumps, beep tones or adhesives to annoy or gum up the works. The reading lamp should be adjusted so you can see each star as it passes the playback head. In addition to the star, you can include the number of the slide which should be on the screen so you won't lose track.

Now let's go back to the start of the tape, and for purposes of this article, let's record our tape at $3\frac{3}{4}$ ips (besides offering longer playing time, it's also easier to see those stars go by at the slower speed). You may want to start with a leader tape. Then, for your first 30 seconds, measure off nine feet $4\frac{1}{2}$ inches and draw your first star. This is the point at which the first slide appears on the screen.

If your opening music is to continue for a total of 70 seconds, after this lead time you still have 40 seconds left during which to show your four introductory slides (seal, titles and map).

It takes two seconds, or $7\frac{1}{2}$ " to change each slide, leaving you eight seconds (30" per slide for viewing time. So starting with your first star, measure three lengths of $37\frac{1}{2}$ " each and put stars Nos. 2, 3 and 4. Slide No. 5 is the first real picture in our show. As indicated on the sample cue sheet, it has change, throw and voice. Measure off $7\frac{1}{2}$ " (for change and place a mark such as a V, to indicate that voice starts at this point. From the V,



measure another $42\frac{3}{4}$ " , which includes $5\frac{1}{4}$ " for throw. Then draw star No. 6.

Our sixth slide calls for change, throw, voice and view. As the voice lasts only three seconds, or $11\frac{1}{2}$ " , there isn't sufficient time to view the slide properly, so you allow a few more seconds for that. Measure off $7\frac{1}{2}$ " , placing another V on the tape to indicate that voice is to begin. Adding up throw, voice and view, you'll need $35\frac{1}{4}$ " . Measure this off and place star number 7. This slide, in our hypothetical show, is a map which requires no explanation. We have only change and view, which requires $37\frac{1}{2}$ " worth of tape. Place a star and the number 8.

Our eighth slide indicates change, view and voice. We don't have to consider throw, because there is no opening commentary. Let's assume this one is a signboard which should remain on the screen long enough for people to read it. Measure off $37\frac{1}{2}$ " and indicate with a V where the voice begins. At 45 inches from that point, place star No. 9. With these examples, you'll be able to make up a cue sheet to fit your own slide show, referring to your script and slides. Make sure you have enough tape on the reel to last the whole show.

Once you've measured off and marked your tape (a yardstick or tape measure handy to your recorder is a big help), you're ready to start recording. Warm up your amplifier, turntable and recorder. Put your measured tape reel on your recorder. Mark a starting point with a grease pencil or press-on label on your recorder and run your tape until your starting mark is in line with it. The same mark on the recorder later tells you when to change slides, as the stars come abreast of it. Record your background music from the turntable through the amplifier to your recorder electronically, using the patch cord supplied by your recorder manufacturer. Put a record on the turntable, and when the music starts, begin recording, fading the music in with the aid of your recorder's volume control.

Setting the volume control on your recorder at a chosen point and using the same point for all your recording and using the volume control on your amplifier will give you a more consistent sound level. Continue recording the music until you near the star indicating the change to slide 5. Then fade it out. If your next slide calls for narration, plug in your microphone. Proceed through the first tray alternating recording sources from amplifier to microphone as the script and your marked tape indicate.

When you finish with the first tray, allow some music for the tray change. Depending on the make and model of your projector, a tray change can take anywhere from 30 seconds to two minutes. If you use light, bouncy music, a wait of $1\frac{1}{2}$ to two minutes isn't too long for any audience. You don't have to rush the change, and it gives your guests an eye rest while entertaining them as well. If you're more dexterous than I am, cut down the time accordingly.

It's a good idea at this point to set up your equipment and run through your first tray to clear up any errors or fluffs which might have occurred.

Prepare your cue sheet for each additional tray in the same manner as the first, marking your first slide No. 1 after your tray change music. To avoid confusion, you might want to assign letters to your trays in alphabetical order—hence the first slide in tray number one is A1, the tenth slide in tray number two is B10, and so on.

You don't absolutely need background music under each slide unless you really want it. Most people will be satisfied with music at the beginning, at tray change time and when you're showing a series of scenic views which call for no explanation. If you do like background music with your show (and most people do) you can use it wherever you want it and wherever it will be effective.

Measuring off your tape before recording eliminates those many splices you have to make when

CONTINUED ON PAGE 45

Adopt-A-Child With Videotape

Little Amy, a 2½-year-old girl from Wilmington, Delaware, has a real home now, thanks in part to videotape recording, television's familiar "instant replay."

Amy's new parents, Mr. and Mrs. Joseph Garrett of Buffalo, N.Y., adopted her after first seeing her tiny form as a television picture played back from a videotape recording. This unique experiment in human relations is the first adoption to be facilitated by the use of videotape recording, according to Norman W. Paget, executive director of the Children's Aid Society of Erie County in Buffalo.

Paget arranged for Amy to be videotaped on an Ampex VR-6000 portable closed circuit videotape recorder by the Children's Bureau of Delaware in Wilmington. The tape was shipped to Buffalo for replay on a similar machine and viewing by the Garretts on a TV set.

Mrs. Garrett said: "When our social worker showed us the tape of Amy, we felt that we knew her. We were more relaxed about going to see her. And when we actually met her, we loved her immediately and wanted to take her home."

The taping project, pioneered by Paget, is a part of a program to facilitate adoption of hard to place children through Adoption Resources Exchange of North America (ARENA), a nationwide clearing house for adoption agencies. ARENA is an arm of the Child Welfare League of America.







SAN ANTONIO, TEXAS—Transportation was more than that when HemisFair visitors boarded on-grounds vehicles for round-trip pleasure viewing. Getting closer to the cool blue waterway which wound through the site, some fairgoers chose the luxury of lagoon cruise boats. Others boarded the Mini-Monorail, passing over the sight and sound sensations of HemisFair during a leisurely twenty minute ride that provides capsule exposure to the 92 acre activities.

Taping A Fair

by Richard Ekstract

IF YOU'VE NEVER been to a country or state fair, you don't know what you've been missing. And if you've never taken your recorder to a fair, you've been missing not only a lot of local color, but some interesting entertainment and educational opportunities.

To prove our point, we took a battery-operated Craig Cassette portable to the biggest fair of them all this year, HemisFair '68 in San Antonio, Texas. Here were all the elements of a successful fair—marching bands, clowns, pretty girls, exhibitors from

all over the world, cotton candy and animals. And people. Thousands upon thousands of people. The Iowa state fair may not have the international visitors, but it has enough in the way of local interest and color to make up the loss.

Had it not been for HemisFair, I doubt that I would ever have had occasion to visit San Antonio, Texas. That would have been a pity because San Antonio is worth a visit anytime. It's one of the most beautiful cities in the United States—and certainly one of the cleanest.





Mad splashes of colorful costume glitter the scenes of the spicy adult puppet show, "Les Poupees de Paris." Elaborate scenery, quick, satirical dialogue and scores of colorful production numbers captivated audiences with wit and glamour. Over 200 intricate and realistic wood and plastic showgirls swing and swayed through

five performances a day during their six-month engagement at HemisFair. Sid and Marty Krofftt, creators of "Les Poupees de Paris," are fifth generation sons of a world-famous family of puppeteers. The dolls average 30 inches in height and some wardrobes cost as much as \$2,500. The wooden girl at left measures 12" x 8" x 12"!



At HemisFair this year, just as at Expo last year, virtually every family group had at least one member sporting a camera. Can you guess how many people we counted with tape recorders? Two. In four days we counted two others taping the sounds of HemisFair while thousands of shutterbugs were clicking away. Stores all over San Antonio were offering top quality color slides of all the major attractions at the fair—but the sounds could never be recaptured without a recorder on the spot.

One of the nicest things about having a tape recorder slung over your shoulder and a microphone in your hand, is that it's the best ice-breaker you could have. The friendliest people would come up and ask why we had the recorder or what we were taping. We explained we were out to capture the sounds of the fair and that this included the people we met. We bagged lots of interviews with charming people and made more new friends than we could ever have hoped to make without the tape recorder.

We approached the fair without a set plan for our taping. We had a half dozen C60 cassettes (enough for six hours of recording) and planned to condense our final HemisFair tape to not more than one hour because we find listening to unedited tapes can become tedious.



Hostesses at the various national pavilions were able to provide remarkable insights into the customs and backgrounds of their nations. Below, 12 year old Jan does the interviewing.



We started with a narrative of our impressions of HemisFair as we approached the main gate. The fair is situated in the heart of downtown San Antonio directly across from the lovely new Palacio Hilton Hotel. The Spanish style hotel sits above one of the city's many navigable canals and is surrounded by charming shops and restaurants designed to capture the charm of 19th century colonial Mexico.

Besides myself and the recorder, there were three unusually active kids whose feet tend to get tired. The kids, in particular, wanted to take sound snapshots with the recorder—and since fairs are primarily for kids, we let them have their way. The result is a collection of sounds ranging from the whisper of the overhead monorail to the excitement of a brass band. In between are conversations with visitors from other parts of the country, an interview with a clown, a lesson in basic Spanish by a particularly pretty *senorita* from Mexico and much much more.

We're using these sound snapshots now to accompany our Kodachrome slides from HemisFair—and together they make a pretty interesting evening's entertainment. Besides, the project of editing the tapes, transferring from cassettes to reel tape, preparing a narration, integrating sound and narration with the slides themselves kept the family busy for the best part of a week.



To the right, 10 year old Steven decides to learn as much as he can about Colombia, South America from this lovely senorita who was only too willing to explain native customs and history.

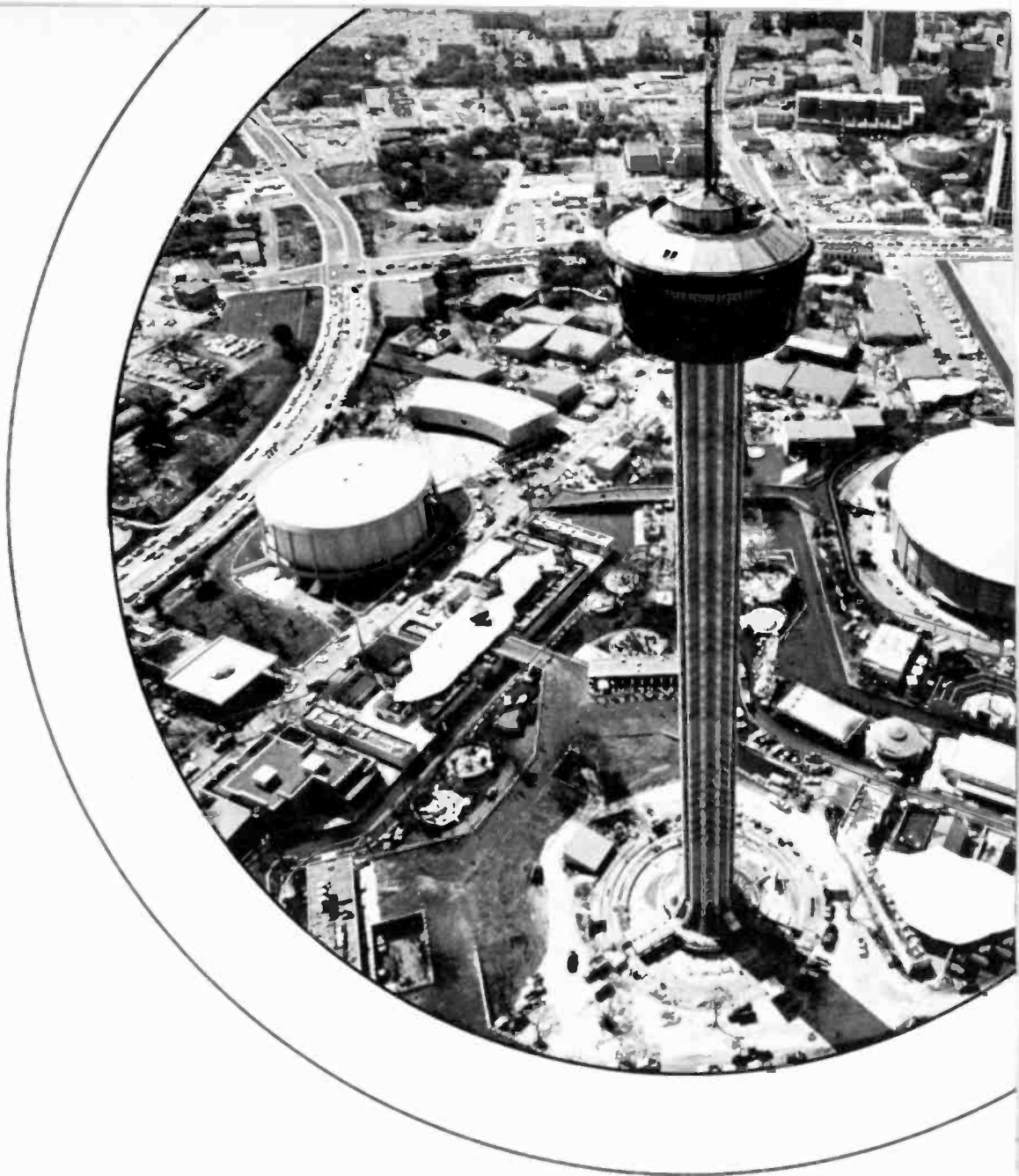
What sort of things do you record? And how do you go about it? One lesson we've learned over the years is to use compact, lightweight equipment wherever possible. Not only does it take up less room in a suitcase, but it's easier to carry around with you all day—and it's ready to go when you stumble across something interesting. In our case, that meant a cassette recorder with a remote control microphone. The kids are both able to operate the machine—although there is a too frequent tendency for them to leave it on at night (relying on the remote control off switch on the microphone to turn the transport off). This means even though the transport isn't working, the amplifier is on—and the batteries run down. The kids made this mistake twice.

Second, let the kids seek out the sounds that appeal to them. We adults somehow lose our ear for the unusual sound, the new experience—and I know I'm a great deal more inhibited than my nine-year-old son. I simply haven't the nerve to march up to a pretty girl I've never met before and ask her to "say something in Spanish." My son did exactly that—and for his trouble came back with his Spanish lesson. My daughter thought the splash of a fountain was "cute." I had passed right by it without noticing. She recorded it, and she was right. It sounds "cute" when the picture of it flashes on our screen.

Among the entertaining sounds we picked up were the swish of the elevator up the 622-foot Tower of the Americas, my son's eyewitness description of the view, pitchmen for the various attractions in the amusement area, the sound of turnstiles clicking and people tramping around the grounds. Then there's the music—folk dancers from Latin America, a bit of Marty and Sid Krofftt's *Poupees de Paris*, the bands and the singers. The kids had a chance to learn about folk customs and dances in the Latin American countries, and we have some recorded samples which they've even used in school. Particularly interesting is my daughter's description and reaction to the Alexander Girard collection of South American dolls.

We weren't in San Antonio primarily for education, but the kids got plenty. At virtually every pavilion they visited, there was someone willing to answer their questions about Colombia or Venezuela or any other country. These taped interviews, besides illustrating our slide shows, are the raw material for at least two school compositions.

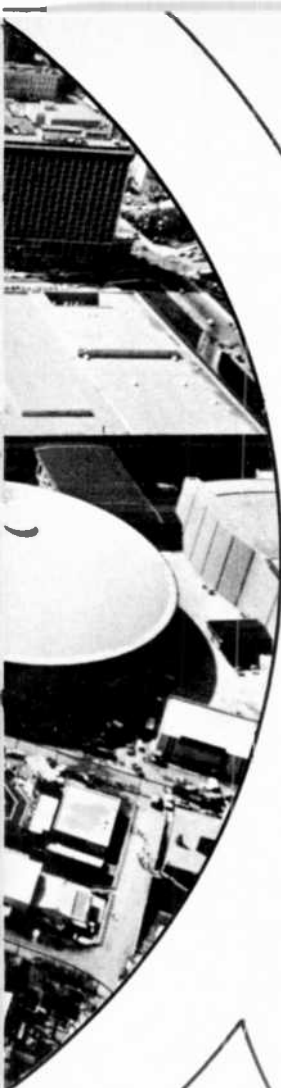
I had forgotten how intriguing dialects from various parts of the United States can be to a youngster. But the kids had a chance to hear everything from a Texas drawl to a New England twang, and they loved it. In fact, when my son announced his intention to capture as many examples as possible on tape, I had visions of a small boy rushing up to a



stranger shoving a microphone in his face and saying, "Gee, you talk funny, mister. Do you mind if I record you?" Actually his interviews were nothing like that. He explained to each person what he wanted to do, and asked them to give him directions or tell their impressions of the fair. Then he asked where they came from and their names. Most interviewees looked pleased when they left.

Dialects aren't my idea of fun, and I doubt if the collection will remain long on tape. But at the moment, there are accents from some 14 states—some of them quite distinctive, and some just like us Easterners.

There's something about a little girl with a tape recorder that catches the imagination even of a clown. My daughter stopped to chat with one on

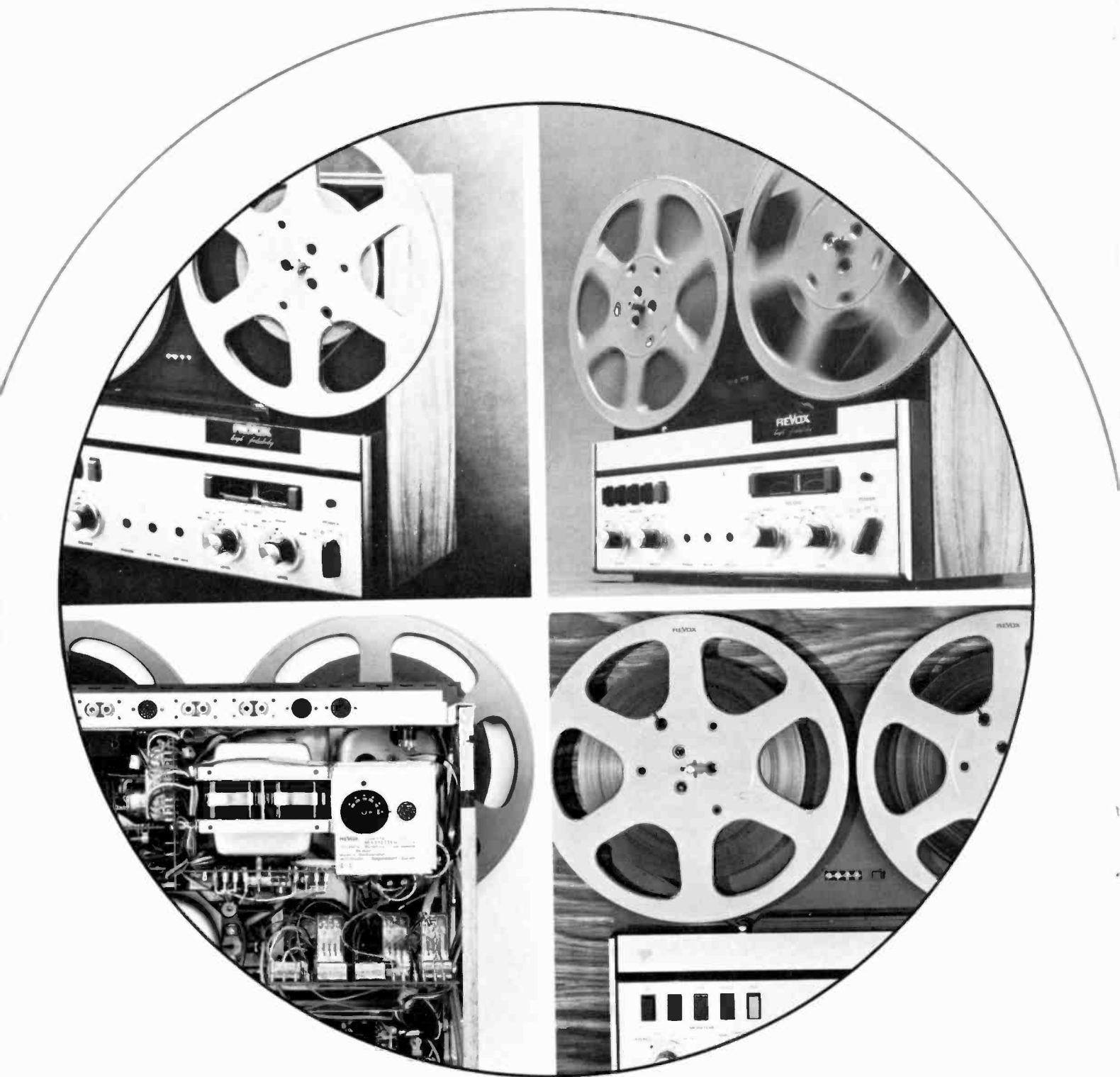


The heart of a city is transformed by a soaring structure and satellite buildings filling 92.6 acres that was HemisFair '68. At dead center stands the 622-foot Tower of the Americas, a permanent legacy to the 250-year-old city of San Antonio. On this site once stood houses and hopes in decay and dwellings reminiscent of a proud and tumultuous past. The history and the hopes have been restored; only the decay has been erased.

the midway; and what started out as an interview with him became instead an interview with her. She's played it several times for her friends since she's been home.

The point is that virtually everything we found at HemisFair has its counterpart in the Eastern States Exposition, the Springfield Fair or the Missouri State Fair. What we did in San Antonio,

you can do at a fair near you. The sound documentary you put together can be as interesting or as educational as you want it to be, by selecting the elements at the fair which appeal to you and arranging them in an interesting manner. Out of our trip has grown an increased familiarity with the recorder on the part of my youngsters, who are itching to try out their *son verite* techniques somewhere else.



A Recorder For All Seasons

A Report on the Revox A77

YOU DON'T HAVE to be a professional to operate the Revox A77 tape recorder—though the professional user or serious hobbyist is more likely to appreciate its many fine features than the beginner. For this \$499 recorder offers two speeds (7½ and 3¾ ips), three heads and three motors.

But that only begins to tell the story. Take the motors, for example. There's one each for the feed and takeup reels and one to pull the tape past the heads. The motors are a new design, not affected by line voltage or frequency. They keep a constant speed by means of an electronic sensing device which operates like a feedback and maintains accurate speed regardless of tension, load or voltage. They consume less current and develop higher torque than those used in comparable recorders. As a result, the A77 handles tape gently, smoothly and with no loss of speed. Tape spindles have a spring loaded lock and don't require the usual rubber press locks. You can move directly from fast forward to fast reverse without stopping and it's a beautiful thing to watch. The on-off switch also selects the speed and is all-electronic. When you stop the machine—by turning it off, pulling out the plug, or by having a power failure—the unit comes to a neutral position, as if you had turned it off manually.

The erase, record and playback heads are similar to those used by Revox on its professional machines and are all metal gripped and locked together under pressure. There are no pressure pad.

Construction features silicon transistors throughout. Each functioning section (two record, two play-

back, bias, equalization) are on separate plug-in circuit boards with gold-plated contacts. Each board is interchangeable on a per-function basis which allows for easy determination of a malfunction, and simplified repair.

The boards are indexed so that you can't insert them into an incorrect position or section. All interconnecting cables are plug-in types via plugs and sockets. What might normally look like a maze of wires is now a clean, wide-open assembly with a tidy professional look.

Yes, you ask, but how does it perform? I'm a former musician, so I rely a lot on what I hear, and how a machine works for me. The first thing I discovered was that I could hear no difference in sound quality between tapes recorded at 3¾ ips and 7½ ips. To be sure, I recorded the same material at both speeds from a test record. After A-Bing the results, I decided that I'll use the faster speed in future only for playing back my library of prerecorded tapes. Incidentally, the tape used in these tests was Scotch Dynarange (203), for which the A77 is calibrated. Fast forward and rewind time for a 1800 feet is 92 seconds (that's fast). Tape threading is not in a straight line, and it takes a second or so longer than on most other machines.

All controls are up front grouped on the left and right hand sides. The left side has five momentary contact push buttons that control fast forward, fast rewind, play, stop and record (red). Just below are all monitor functions: mode selector (stereo,

CONTINUED ON PAGE 45

tape

REVIEWS

CLASSICAL AND POPULAR

Count Basie

Broadway Basie's Way/Hollywood Basie's Way, includes *Hello Young Lovers, Secret Love, In the Still of the Night, The Shadow of Your Smile, People, Mame, Strangers in the Night, On a Clear Day and many more.* Command CMJ 8912, eight-track cartridge, \$6.95.

| | |
|-------------------|------|
| Music Performance | **** |
| Recording | **** |

On this Double Pak, Count Basie and his orchestra play a variety of the biggest hits to come from the stage and screen. The immensity of the orchestra could easily tend to make many of the selections sound overplayed, but the injection of a number of solos reduces this problem. In fact, Basie's ability as an arranger stands out as much as his proficiency as a pianist. The Count certainly knows "his way" through both Hollywood and Broadway. —S.F.

Harry Belafonte

Belafonte Sings of Love, includes *Annie-Love, By the Time I Get to Phoenix, A Day in the Life of a Fool, You Time, In the Beginning and others.* RCA P8S 1317, eight-track cartridge, \$6.95.

| | |
|-------------------|-----|
| Music Performance | * |
| Recording | *** |

Harry Belafonte is still remembered for his proficiency with calypso. As a current balladeer, he shows none of the feelings of spirit and liveliness which seemed to exude from his earlier recordings. He is just another strong voice. One of the songs on *Belafonte Sings of Love* is entitled *Each Day (I Look for Yesterday)*. Perhaps if Belafonte finds it, the public will benefit by his return to calypso music. —S.F.

Glen Campbell

A New Place In The Sun. Selections: *Freeborn Man, The Last Letter, She Called Me Baby, Visions Of Sugarplums, I Have No One To Love Me Anymore, The Legend Of Bonnie And Clyde, A Place In The Sun, Have I Stayed Away Too Long?, Within My Memory, The Twelfth Of Never, Sunny Day Girl.* Capitol YIT 2907. Recorded at 3¾ ips, \$5.95.

| | |
|-------------------|-----|
| Music Performance | *** |
| Recording | *** |

Glen Campbell, destined for greater glory, is present in this latest tape of folk-popular items, cut from today's top charts. With the successes of *Gentle On My Mind*, and *By The Time I Get To Phoenix*, under his belt, his renditions of *Visions Of Sugarplums* and *Have I Stayed Away Too Long* contained in this package, should push his star even higher. Incidentally, Glen wrote *Visions Of Sugarplums* and *I Have No One To Love Me Anymore*. —F.R.

Charlie Byrd

Sketches of Brazil, includes *Preludes #1, 2, 3, 4, and 5 and Etudes #1, 5, 7, 8, and 11.* Columbia 18 10 0382, eight-track cartridge, \$6.95.

| | |
|-------------------|-----|
| Music Performance | * |
| Recording | *** |

Charlie Byrd is recognized by most jazz enthusiasts as one of the foremost masters of the guitar. But this tape is not made to suit the fancy of this enthusiast. Rather, I believe it will only meet the approval of the "jazz nut." Byrd does not play a normal selection of songs. Instead, the tape includes a series of *Preludes* and *Etudes*, all of which sound alike to the normal ear. The tape does justice to neither the music of Brazil nor the talent of Charlie Byrd. —S.F.

Ray Charles

A Portrait of Ray Charles, includes: *Don't Say No to Me, Am I Blue, Yesterdays, Understanding, Eleanor Rigby, The Sun Died and others.* ABC Records, Inc. ABM 8625, eight-track cartridge, \$6.95.

| | |
|-------------------|----|
| Music Performance | * |
| Recording | ** |

Even the finest artist does not turn every canvas into a masterpiece. *A Portrait of Ray Charles* gives a rather distorted view of the subject, not divulging adequately Charles' staggering supply of talent. *Eleanor Rigby*, a Beatles' song is the one distinguished tune on this tape. *Am I Blue* shows top form. —S.F.



Neil Diamond

Just For You, includes *Girl, You'll Be a Woman Soon, Cherry, Cherry, I'm a Believer, Solitary Man, You Got to Me, Thank the Lord for the Night Time and others. Bang BAM 8217, eight-track cartridge, \$6.95.*

| | |
|-------------|------|
| Music | ★★★★ |
| Performance | ★★★★ |
| Recording | ★★★ |

Not too long ago, Neil Diamond skyrocketed to success. Since that time, he has continued to rise on that high plateau.

Diamond has released one hit after another, displaying equal artistry for fast songs and slow. *Just for You* includes all of his best numbers, making it a must for any of his fans. —S.F.

Arthur Fiedler

The Pops Goes Latin, Boston Pops, Arthur Fiedler. *Included: Spanish Flea, A Taste Of Honey, Ritual Fire Dance, Rhumba, Tango, Guaracha, Conga, Manha de Carnaval (Parts 1 & 2), Tijuana Taxi, Dansero, Desafinado. RCA Victor R8S 1092, eight-track cartridge, \$6.95.*

| | |
|-------------|-----|
| Music | ★★★ |
| Performance | ★★★ |
| Recording | ★★★ |

Arthur Fiedler, looking somewhat like a dignified Mr. Pastry, has donned a sombrero and placed solo trumpeter Roger Voisin's music stand center stage for a run through of basically the TJB songbook. A well orchestrated cartridge with best results showing in *Spanish Flea, Manha de Carnaval*, and *Dansero*. In over 30 years of recording, the Boston Pops can always be called on to create a pleasant diversion, and this is no exception. Fans will love it. —F.R.



Tommy Garrett

Our Love Affair, The 50 Guitars Of Tommy Garrett. *Selections include This Is My Song, If Ever I Would Leave You, Never My Love, I Will Wait For You, A Prophecy Of Love, I Hear A Symphony, Born Free, Melody Of Love, The Impossible Dream, Sunny, A Lover's Concerto, Our Love Affair.* Liberty STL 14041-C. Recorded at 7½ ips, \$6.95.

| | |
|-------------|-----|
| Music | *** |
| Performance | *** |
| Recording | *** |

There are strings and there are strings but nothing like the guitar strings of the Garrett ensemble. Musically they have carried us around the world and now it's the world of romance. Garrett's intricate sounds provided by 50 guitars weave imaginative patterns through this tape of contemporary love songs. This, one of such tasty outings is best mounted for all around listening. Outstanding selections, *I Will Wait For You, Melody Of Love, If Ever I Would Leave You*, highlight a perfectly romantic mood.

—F.R.

Sherlock Holmes

Doyle The Final Problem; The Adventure of the Speckled Band read by Basil Rathbone. *Caedmon-AuraSonic 4824, eight-track cartridge, \$6.95.*

| | |
|-------------|-------|
| Music | **** |
| Performance | ****½ |
| Recording | *** |

Let's get the quibbles out of the way first. Contrary to any information on the label, this is *not* a stereo recording. It is good mono sound, with no distinguishing characteristics. Second, the Basil Rathbone on this tape is not the one who electrified a generation of small boys in the 1940s with his characterization of Sir Arthur Conan Doyle's hero. The voice is huskier, less able to generate suspense.

But the readings are much better than any others we're likely to hear in our lifetime, and they make excellent listening on a long motor trip—right after the Mantovani and just before the Joan Baez. Spoken word really scores in cartridges, in our opinion. The end-of-track

interruptions are there, but you really don't notice them as you do in a piece of serious music. To introduce your children to the pleasures of Holmes' Victorian London, there's nothing better we can recommend than this tape. And if it's been a while since you read these stories yourself, this tape will remind you to dig that copy of the complete Sherlock Holmes off your library shelf. So what if it isn't stereo, or if Rathbone (unlike Holmes) has aged over the years? Do yourself a favor—buy the tape.—R.A.

The Influence

The Influence, includes *Pieces of Me, County Fair, We Are Here, Dream Woman and others*. ABC ABM 8630, eight-track cartridge, \$6.95.

| | |
|-------------------|----|
| Music Performance | * |
| Recording | ** |

A word of advice for people who have yet to hear *The Influence* and would like to know what to expect: be ready for anything! Their varied styles range from the psychedelic to a semblance of Rudy Vallee. This could be very advantageous to the group if they knew when to employ which technique. But they throw them all together in a highly disorganized fashion, jumping from one extreme to another in the middle of a song. The result? A waste of talent.—S.F.

Warren Kime

Explosive Brass Impact, includes *Georgy Girl, A Man and a Woman, The Gentle Rain, Feeling Good, So What's New and others*. Command CMM 8919, eight-track cartridge, \$6.95.

| | |
|-------------------|------|
| Music Performance | *** |
| Recording | **** |

Warren Kime's "Brass Impact" is one of the few orchestras which can take advantage of all its instruments and still sound like a small combo. Each of the mellifluous horns has a chance in the spotlight. Particularly noteworthy are the screaming trumpets. There is a varied selection of songs and even those which have been constantly recorded are given a new dimension.—S.F.

The Koto

Sound of the Koto—Kimio Eto playing the Koto. Includes: *Choryu (The Current), Yorokobi, Midare (Classical Instrumental Piece), Midori No Asa (Bright Morning), Rokudan (Classical Piece in Six Movements), Kibo No Hikari (A Light of Hope), and Kinuta (The Sound of Water)*. World Pacific STWP 21439, 7½ ips, \$6.95.

| | |
|-------------------|-----|
| Music Performance | * |
| Recording | *** |

When the first sounds from this tape came out of my speakers, I thought for a moment that the man who stuffs the tape boxes in the International division over at Greentree had gone bughouse and gotten a bouzouki recital in this package instead. Later I heard hints of Scarlatti's harpsichord pieces—not his best ones—and that godawful incessant tremolo that is inflicted on those mandolins that accompany travelogues about Naples. Man, I thought, *this* is eclecticism. Imagine my relief when the *Midare* track began. It is an authentic Japanese classical piece for the koto—which, in case you don't know, is a long zither-like instrument with 13 silken strings stretched over its convex board. *Midare* and *Rokudan*, the lone classical piece on the second sequence, are lovely: over very sparing "harmonies," quiet contemplative melodies float with hypnotic gentleness. But as for the Westernized rest—well, it's only for those who have a real hang-up on the harp or zither or bouzouki or mandolin or. . . . Good sound.—C.T.

Trini Lopez

It's A Great Life. Featuring: *It's A Great Life, Windy, Pow, Pow, Pow, Let's Take A Walk, Shame And Scandal In The Family, I Won't Let You See Me Cry, Luna Lunera, The Happening, The Letter, I Can't Go On Living Baby Without You, Nochesita, Sally Was A Good Old Girl*. W7 Reprise 8RM 6285, eight-track cartridge, \$6.95.

| | |
|-------------------|-----|
| Music Performance | *** |
| Recording | *** |

Trini Lopez—that ball of fire—has another sure-fire tape. It bounces and rocks, it has fun, this tape, nurtured by that fine conductor, arranger Don Costa. Trini, the happy troubador, shows us all how to have fun when he sings *The Happening, It's A Great Life, and Sally Was A Good Old Girl*. A good bet for teens, the college gang, or those easy summer parties. Feed-back has been completely eliminated.—F.R.

Herbie Mann

The Wailing Dervishes, includes the title song, *Norwegian Wood, Flute Bag, In the Medina and Armenian Lullaby*. Atlantic ALM 81497, eight-track cartridge, \$6.95.

| | |
|-------------------|------|
| Music Performance | *** |
| Recording | **** |

Herbie Mann is recognized as the top jazz flutist of the day. Listen to this tape and find out why.—S.F.

Midnight String Quartet

Love Rhapsodies, includes *Never My Love, My Prayer, Can't Take My Eyes Off You, Please Love Me Forever, Tara's Theme, Goin' Out of My Head, The Impossible Dream and others*. Viva VIM 86013, eight-track cartridge \$6.95.

| | |
|-------------------|------|
| Music Performance | **** |
| Recording | ** |

The Midnight String Quartet approach all the numbers on this tape in the same, unimaginative manner. Each, whether an old standard or a recent rock and roll hit, begins to sound the same as the song before it. The Quartet plays everything softly and without noteworthy solos. Nevertheless, their repertoire is well chosen and if in love, the rhapsodies may still be appreciated.—S.F.

Charles Mingus

The Clown. Includes: *Haitian Fight Song, The Clown, Blue Cee, and Reincarnation of a Lovebird*. Atlantic ALM 81260, eight track cartridge, \$6.95.

| | |
|-------------------|----|
| Music Performance | ** |
| Recording | ** |

Charles Mingus has a reputation as one of the top performers in the world of jazz. But for a quarter of this tape he neglects the mode in which his position of renown was gained and concentrates on telling a trite tale about a clown. For the remainder of the tape, Mingus returns to his normal style. Yet this too does not measure up to his usual high standard. —S.F.

The Music Man

Original soundtrack recording with Robert Preston, Shirley Jones, Buddy Hackett, Hermione Gingold and Paul Ford. Stereo Cassette. Warner Bros, CWX 1459, \$6.95.

| | |
|-------------------|------|
| Music Performance | **** |
| Recording | *** |

The Music Man has lost none of its charm through the years in spite of its advancing age and its wide circulation on discs and prerecorded tape. It's been seen through revivals, the movie version keeps coming back, and now we have this sound track recording on a cassette to round out the picture. It's as delightful as ever, and listening to it on the cassette is almost like rehearsing a favorite memory that has never quite disappeared. This Ampex release is destined to take a place of distinction in this reviewer's cassette library. —W.G.S.

George Shearing

Shearing Today! Includes: *Goin' Out Of My Head, A Time For Love, I Say A Little Prayer, Echoes In The Night, Don't Sleep In The Subway, By The Time I Get To Phoenix, Love Is Blue, Theme From 'Valley Of The Dolls', Never My Love, Here Comes The Morning, Morse Mode.* Capitol YIT 2699. Recorded at 3¼ ips, \$5.95.

| | |
|-------------------|-----|
| Music Performance | *** |
| Recording | *** |

For the jazz fan, this may be the first time he is able to understand fully to-

day's popular hits. Shearing's unique talent has taken all the original blends and textures and molded them his way. The result is a new kind of excitement. George and the Quintet with some added percussion are the most effective exploring *By The Time I Get To Phoenix, Goin' Out Of My Head, and Here Comes The Morning.* —F.R.

Spoken Word

American Poems of Patriotism includes *The Star-Spangled Banner; Paul Revere's Ride; America; America the Beautiful; Yankee Doodle; Old Ironsides; The Declaration of Independence; The Gettysburg Address; and others.* Read by Julie Harris, Ed Begley and Frederick O'Neal. Caedman AudioSonic 4809, eight-track cartridge, \$6.95.

| | |
|-------------------|------|
| Music Performance | **** |
| Recording | *** |

Everett McKinley Dirksen recently recorded some of the same material for Capitol Records (thankfully, it's not yet available on tape), where it became a best-seller. The difference between the senior Senator from Illinois and Harris, Begley and O'Neal is that between cloying sentimentality and tasteful professionalism. While it may be that Sen. Dirksen feels these selections (only a handful are poems in the technical sense) more deeply, it is the actors who are able to shape them and give them meaning. Miss Harris and Mr. Begley in particular avoid the tendency to become sentimental, and provide excellent readings of material which is (or should be) familiar to every schoolboy.

If you want this material in your home, this is the tape to have. We hate to sound unpatriotic, but since listening to it for review purposes, the cartridge hasn't been out of its sleeve. This just isn't the sort of program you listen to very often, no matter how well done it is. —R. A.

The Lovin' Spoonful

The Best of the Lovin' Spoonful, No. 2, includes *Six O'Clock, Nashville Cats, Darling Be Home Soon, Money, Rain on the Roof, Old Folks and others.* Kama

Sutra KCB 88064, eight-track cartridge, \$6.95.

| | |
|-------------------|-----|
| Music Performance | ** |
| Recording | *** |

When The Lovin' Spoonful first made it on the rock scene, they made it big. Almost immediately they had a sufficient number of winners to fill a "greatest hits" album. As time progressed, their popularity seemed to falter. Nevertheless, they continued producing songs; enough, in fact, to fill another album. The only numbers, however, on *The Best of The Lovin' Spoonful, No. 2* which met with even moderate success were *Darling Be Home Soon, Nashville Cats* and *Rain on the Roof.* It seems as if the tape is inappropriately named, for it certainly does not contain the group's best songs. —S.F.

The Village Stompers

Washington Square. Includes *Washington Square, Midnight In Moscow, Green, Green, The Poet And The Prophet, Blowin' In The Wind, Blue Grass, If I Had A Hammer, We Can't Stop Singin', Follow The Drinkin' Gourd, Walk Right In, Cold Steel Canyons, Tie Me Kangaroo Down, Sport.* Epic N18 10108, eight-track cartridge, \$6.95.

| | |
|-------------------|-----|
| Music Performance | *** |
| Recording | ** |

Not since Louis Armstrong left the riverboats has there been a swinging dixieland group the likes of The Village Stompers. A folk-dixie idiom, noted as an American Renaissance, the boys create almost 29 minutes of contemporary standards vividly and folk-spiritually. All selections are well performed, with *Washington Square, If I Had A Hammer* and *Blowin' In The Wind* being particular standouts. One drawback is the presence of cross-talk. —F.R.

Liza Minelli

Liza Minelli with the orchestras of Peter Matz, Nick DeCarlo, and Bob Thompson. Selections include: *The Debutante's Ball, Happyland, The Look Of Love,*

The Tragedy Of Butterfly McHeart, Waiting For My Friend, Married, You'd Better Sit Down, Kids, So Long Dad, For No One, My Mammy, The Happy Time. A & M AMM 8141, eight-track cartridge, \$6.95.

| | |
|-------------|-----|
| Music | *** |
| Performance | *** |
| Recording | *** |

Miss Minnelli has cast aside her impressions of mother Judy Garland and has created a recorded treasure. Most effective treatments can be heard on *The Debutante's Ball, Butterfly McHeart, My Mammy* and Burt Bacharach's *The Look Of Love*. With a rich voice, Liza sparkles with a magically sad-happy glow. —F.R.

Johnny Rivers

Rewind. Includes: *Sidewalk Song, Baby I Need Your Lovin', The Eleventh Song, Sweet Smiling Children—and others. Imperial ST 1-12341, 7½ ips, \$6.95.*

| | |
|-------------|-----|
| Music | * |
| Performance | * |
| Recording | *** |

Johnny Rivers has talent, and it's almost enough here. In a sad song his hoarse but manly and appealing voice is like a cold wind around the heart—and he is one of the very few white singers I have ever heard who is really comfortable in rhythm-and-blues. But I wish he'd stick to r-&-b, and to its cousin country-and-western, in both of which he excels. On this tape he meets up with some of the most abominable new-rock material ever to come down the pike, and it defeats him. The first sequence is good, in spite of banal arrangements, a tawdry chorus grooving sloppily in the background, and the orchestra's strings wailing like so many tone-deaf banshees through everything. *Tracks of My Tears* and *Tunesmith* survive, and *It'll Never Happen Again* and *Do What You Gotta Do* are affecting. Only *Carpet Man* gives some warning of what's to come on the second sequence, and fortunately Rivers overdubs so much on it that the listener is spared its imbecile lyrics. But turn this tape over, and oh my stars! I had just about decided that *For Emily, Whenever I May*

Find Her was positively unchallenged as the worst song I had ever heard when *Rosecrane Boulevard* came through the speakers, and I had to change my mind. I wish I could tell you who's to blame for these monstrosities, but the tape box has not one tiny bit of information about the songs, the arrangements, the chorus and orchestra, and so forth. Cowards! Postscript to Mr. Rivers—next time out, Johnny, just bring your guitar and a couple of tunes like *It'll Never Happen Again*. —C.T.

Horace Silver

Song for My Father. Includes: *Song for My Father, The Natives Are Restless Tonight, and others. Blue Note STB 84185, 7½ ips, \$6.95.*

| | |
|-------------|------|
| Music | **** |
| Performance | **** |
| Recording | *** |

Time, and with it the strident excesses of the protesting jazz avant garde, seems to have passed the Horace Silver Quintet by. They still play *music*. True, they do seem a little unimaginative, but they have collectively more than enough solid merit to compensate. The six tunes here, released on a disc in 1965, are split four-two between a new and an old quintet, but it doesn't make much difference—the generalities apply to both. The title song is typical—gentle, lyrical, bluesy bossa nova to please Horace's daddy, who is of Portuguese background and was born in the Cape Verde islands. *Lonely Woman*, one of the songs utilizing the older personnel (the other being *Calcutta Cuties*), has Horace solo against drums-and-bass accompaniment in a melancholy meditation in which mood triumphs over predictability. *Que pasa*, strains of which sound like *Nice Work If You Can Get It*, is distinguished by Joe Henderson's "speaking" tenor sax; in *The Kicker*, written by Henderson and the only song here that is not a Silver original, there are swinging solos by Henderson and trumpeter Carmell Jones, the latter in a particularly fluent and effervescent groove. You say it's not NOW? I say, hooray for THEN. The sonics are fine: there is very little hiss, the horns and piano sound natural and warm, the bass is solid, and the stereo spread is not exaggerated. —C.T.

One of a series of brief discussions
by Electro-Voice engineers



In recording studios and in live performances, a trend has developed that spells danger for the unwary sound engineer. This is the tendency of many performers to use ultra-close miking, often singing or playing less than 1" from the microphone—and at full volume.

While the obvious hazard of breath noises and "pops" can be controlled with modern windscreens, another problem associated with close miking can also plague the engineer. At these short distances, the sound pressure level (SPL) developed by singers or instrumentalists can be extremely high, and instantaneous peaks as high as +130 db SPL are not uncommon.

Under these conditions, distortion often results, and the microphone is usually blamed. In the case of modern dynamic microphones, however, it is virtually impossible to fault the microphone. As an example, Electro-Voice routinely tests every professional microphone in a +140 db SPL field at 100 Hz. The output must be a perfect sine wave or the microphone is rejected.

Needless to say, this sound pressure level is well above human tolerances, and is rarely encountered. The ability of a dynamic microphone to accurately reproduce high energy sound at this level does pose a problem of major proportions for the input equipment, however.

For instance, an E-V Model 668 (normally rated at -51 db) can provide a clean signal of -17 dbm to the pre-amp during close miking of drums, brass, and other instruments with high level transients. And under the same conditions (assuming +130 db SPL) an E-V Model 642 will deliver -2 dbm!

This high output is more than sufficient to drive many transistorized pre-amp circuits into cutoff, or to generate high distortion in tube-type pre-amps designed for use with microphone techniques that did not include the ultra-close pickups so common today. The solution to the problem is simple: a pad can be inserted between the microphone and the input stage. One such pad is presently being offered by Electro-Voice (Model No. 380 -10 db). Use of a pad in the microphone line eliminates the need to alter the input circuitry, so that the gain of the circuit is still available when needed. And the insertion of an appropriate pad may permit use of microphones formerly thought unsuited for close miking applications.

For reprints of other discussions in this series,
or technical data on any E-V product, write:
ELECTRO-VOICE, INC., Dept. 783TR
637 Cecll St., Buchanan, Michigan 49107



Circle 5 on Reader's Service Card



Slim Whitman

15th Anniversary Album. Includes *Indian Love Call, I'll Take You Home Again Kathleen, North Wind, Valley Of Tears, Rose Marie, Bandera Waltz, Serenade, Secret Love, Tumbling Tumbleweeds, Love Song Of The Waterfall, I'm A Fool, There's A Rainbow In Every Teardrop, Cattle Call, Keep It A Secret, More Than Yesterday, China Doll.* Imperial-Liberty STI 12342-C. Recorded at 7½ ips, \$6.95.

| | |
|-------------|-----|
| Music | *** |
| Performance | *** |
| Recording | *** |

There are some horses grazing in a far pasture and some smoke coming from the bunkhouse chimney. The coffee is hot and it's time to reflect. And this is what Slim Whitman has done in his latest tape which happens to be his 15th Anniversary album. With all new performances, Slim reminds us he is one of the top singers in country and western music today. The material he chose isn't especially associated with him but has become his through his special treatments. The best sides are *Keep It A Secret, Indian Love Call, Rose Marie*, and *Secret Love*. A fine library piece by a potent artist. —F.R.

Jimmy Smith

Midnight Special. Includes: *Midnight Special, A Subtle One, Jumpin' The Blues, Why Was I Born, One O'Clock Jump.* Blue Note STB 84078-C, recorded at 7½ ips, \$6.95.

| | |
|-------------|-----|
| Music | *** |
| Performance | *** |
| Recording | *** |

When a Jazz organ rolls boxcars, it's not always a sign of disaster. In this, his latest tape, Smith along with Stan Turrentine, Kenny Burrell, and Don Bailey ride a lonely train. And as it begins to pick up speed so do our exponents. The entire set becomes sheer excitement before reaching the final destination. Need more be said? In an industry where there's a vast turnover, Jimmy is perhaps one of a select few who could be represented tape wise every day and become a one way ticket to the poor house for the buying public. —F.R.

Jimmy Smith

I'm Movin' On. Selections include: *I'm Movin' On, Hotel Happiness, Cherry, T'aint No Use, Back Talk, What Kind Of Fool Am I.* Blue Note STB 84255-C, recorded at 7½ ips, \$6.95.

| | |
|-------------|-----|
| Music | *** |
| Performance | *** |
| Recording | *** |

It's another bag for Jimmy Smith. Along with Grant Smith, and Don Bailey, he gives us a highly romantic etching of *What Kind Of Fool Am I*. Jimmy then trades 12 bar choruses with Green's guitar on *Back Talk*. Harry James' "Cherry" is brought back to life with new and different improvisations. The whole package moves on all to quickly. In fact Jazz fans will find this the fastest 36:05 on tape. A good companion tape to *Midnight Special*. —F.R.

Roger Williams

More Than a Miracle, includes *The Impossible Dream, Alfie, Ode to Billie Joe, To Sir With Love, Mas Que Nada, Never My Love, the title song and others.* Kapp KTM 83550, eight-track cartridge, \$6.95.

| | |
|-------------|------|
| Music | **** |
| Performance | *** |
| Recording | **** |

Although not devoted to the new sound or the now rhythms, Roger Williams does approach new songs in his characteristically gentlemanly style which, more often than not, blunts the bite of a strident melody into soft saccharine sentimentality. Again and again he pauses reflectively over tinkling arpeggios, conjuring up musical images of yesterday. But, never can he be faulted as unlistenable. Pleasant is the word for Roger. —S.F.

Simplified Slide Show

CONTINUED FROM PAGE 25

you record the narration straight through and then cut it apart and splice it in. You can use splices at the end of each tray, but you can avoid these by continuing your tape right along from one tray to another. You might prefer to record your music on a separate piece of tape and splice it in, dividing your slide time into intervals where necessary the same way you would if you kept your tape in one continuous piece. Recording the music separately gives you a little more freedom in fading in and out.

If your narration or music isn't as loud or soft as it should be, note the fact on the tape itself and moderate it with your recorder volume control during the slide show.

Don't let your show get so long that your audience gets bored. If you make it interesting, you should have no difficulty. I've seen some 30-minute shows that were too long. On the other hand, I've been sorry when some twice that length came to an end.

So now you have everything down on tape to your complete satisfaction and you're ready to start your show. Bring the music starter mark up to your deck mark, start your recorder and when that first star shows up, flip up your first slide. You're on your way.

| CUE SHEET | | | | |
|--|-------------------|-------------------|---------------------------------|---|
| TRAY No. 1 SUBJECT..... SPEED IPS $3\frac{3}{4}$ | | | | |
| SLICE | CHANGE | THROW | VOICE—MUSIC—VIEW | |
| | | | MUSIC LEAD 9' 4 $\frac{1}{2}$ " | 30 SEC. |
| 1 | 7 $\frac{1}{2}$ " | 2 SEC. | MUSIC 30" | 8 SEC. |
| 2 | " | | " " | " |
| 3 | " | | " " | " |
| 4 | " | | " " | " |
| 5 | " | 5 $\frac{1}{4}$ " | 1 $\frac{3}{5}$ SEC. | VOICE 37 $\frac{1}{2}$ " 10 SEC. |
| 6 | " | " | " | " 11 $\frac{1}{4}$ " 3 SEC. VIEW 18 $\frac{3}{4}$ " 5 SEC. |
| 7 | " | | VIEW 30" | 8 SEC. |
| 8 | " | | " 30" | 8 SEC. VOICE 45" 12 SEC. |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |

Recorder for all Seasons

CONTINUED FROM PAGE 37

channel one, channel two, mono) and output volume control, source and playback (NAB or IEC) for A-B testing and balance control (which operated in record or playback.) On the right side there are two accurate VU meters (with a six db lead for transient peaks) with their own red record pre-selector buttons. Below each meter are the corresponding input selector and recording level controls. Selection is for either Hi or Low, Radio (receiver) one—two (transfer of track one to track two on channel one control or reversed for channel two control.) On the far right is the power switch (with indicator light) which selects tape speed (left) for 3 $\frac{3}{4}$ ips or 7 $\frac{1}{2}$ ips (right). Tape tension is selected for 10 $\frac{1}{2}$ inch or seven inch reels by stopping in either large circles or small circle.

In the center are standard plugs for earphones (Five-400 ohms), Channel one mic and channel two mic (microphones inputs are in tandem with the rear recessed mic inputs).

Inputs and Outputs are set in a recessed back panel just below the flush folding handle. You can handle a stereo receiver and record player plus stereo mics and a second tape recorder all at one time for any array of duplicity, dubbing, mixing with fade ins and overs. All of the switching, selecting, A-B Testing are done simply with the front panel controls without touching a cable.

Above the front control panel is a spring loaded drop gate which conceals the tape path for threading and the electronic eye cut off. This little gadget will apply the brakes in all operating modes and put the machine in a complete neutral position if the tape breaks, or white leader is inserted, or the oxide coating is removed. A little imagination and you have many other uses for this type of stop mechanism.

To the left of the threading path are two push buttons, one for speakers off (for models with amplifiers) and one for reel motors off. To the right of the thread path is a sliding pin which drops the tape lifter so that with reel power off, brakes released, you can turn the reels freely by hand and find the exact spot on the tape you wish to edit and then splice, using the splicing block built into the head cover.

Revox is manufactured by Willi Studer of Switzerland and distributed by Revox Corp., Roslyn Heights, N. Y. 11577.
CHUCK AUERBACH

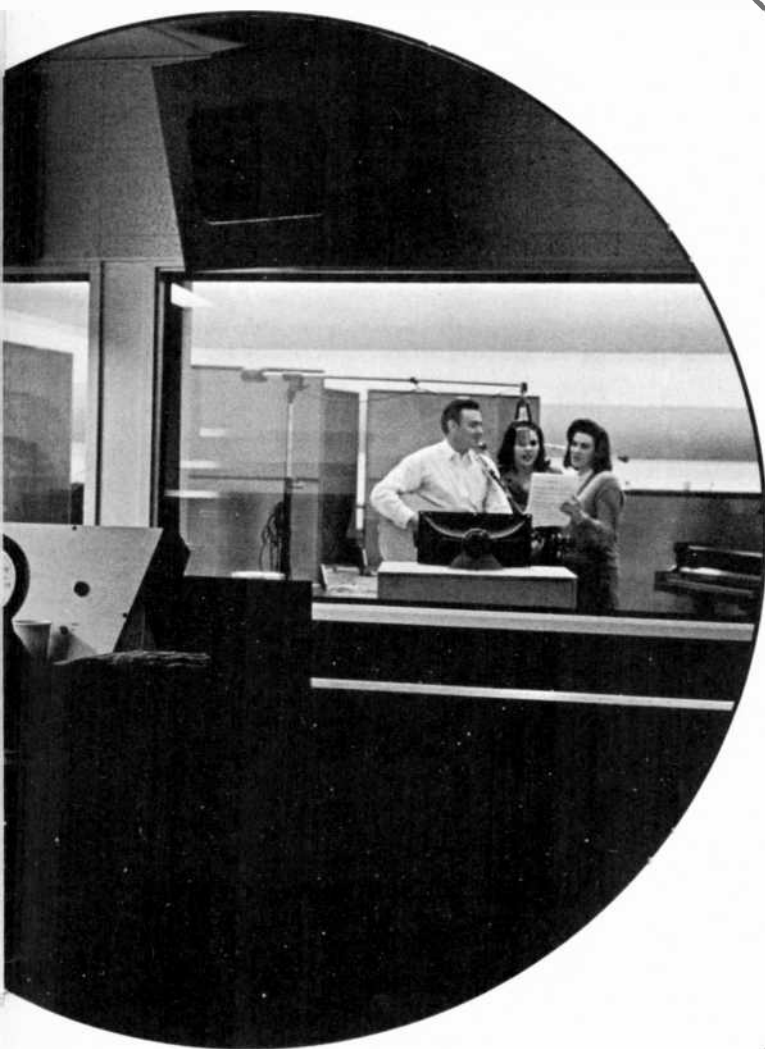
Stopwatch, score and versatile mixing panel are essential parts of professional recording. At right, small vocal group gathers closely about cardioid condenser microphone.



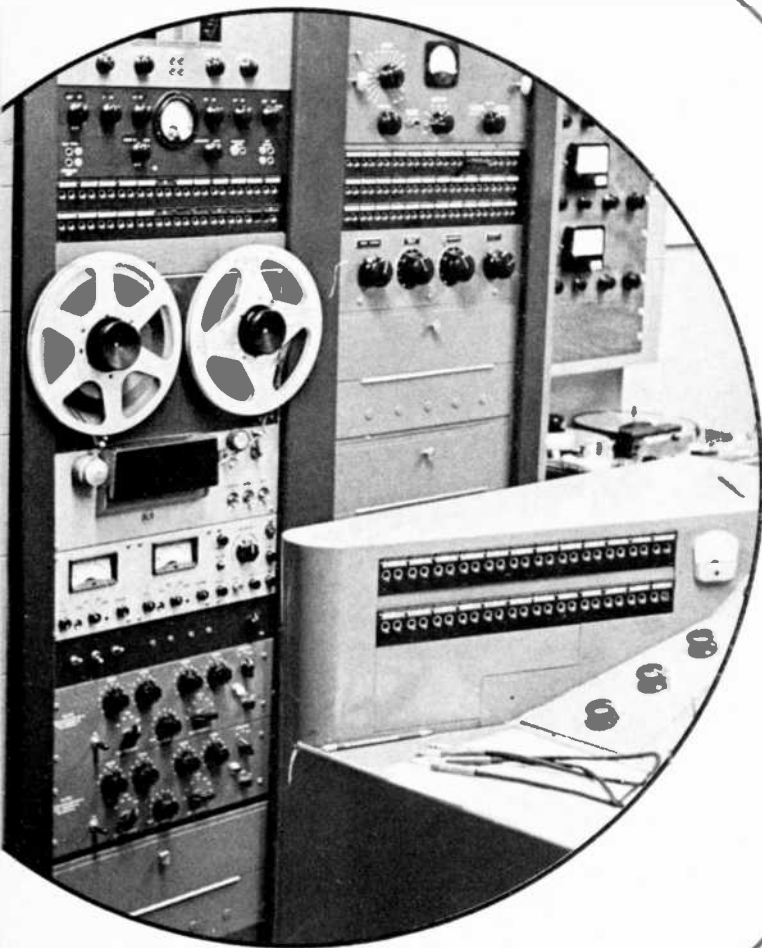
Mikes Make The Recording

by Beverly Mack

Every professional recording engineer knows that microphones make the recording—a fact that amateur recordists quickly learn. To see what the professionals are up to, TAPE RECORDING's wandering cameraman recently visited the studios of RCA Victor. The changes which have taken place in recent years in recording technique and equipment aren't easily duplicated by the home recordist, but some of the ideas on these pages may help you make better recordings—whether you're recording a small instrumental or vocal group, a large group like a chorus or band, or anything else. Most of the microphones you'll see are cardioids—used surprisingly close to vocalists and instrumental sections to permit the recording engineer the maximum amount of flexibility in achieving balance and a satisfying blend of sound.



Three additional mikes cover chorus on stage behind orchestra. Soundproof screen at left separates kettle drum from chorus and rest of orchestra. Right, a Broadway show records in Webster Hall in New York. Singers, behind the conductor, use omni-directional mike.



Control room equipment at left is among the world's most advanced—yet it contains many of the elements found in average home recording. Floor of RCA studios in Rome (center) is ruled off like checkerboard to facilitate opera sessions in stereo. Only three cardioids cover orchestra for this taping session.



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tape

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TAPESPONDENTS WANTED

ANDRE D. LE TOURNEAU, 221 Rider Ave., Malverne, N.Y. 11565. A 22 year old owner of a Sony 260 mono/ stereo (3¾ and 7½ IPS). Is interested in "Oldies but Goodies" original mono or stereo. Wants to make new friends with those of same age group.

MALCOM JAY GOTTESMAN, 345 Beach 143rd St., Rockaway Park, N.Y. 11694. Owns a Sony 255A mono or stereo (1⅞, 3¾ and 7½). Interested in photography, show music, Matovani, Jerry Vale, Sinatra, Bennett, and Dixieland and Chicago, Jazz.

ERIK H. SORENSEN, 2150 Sherman Ave., Evanston, Ill. 60201. Owner of a Sony TC 800 mono (3¾). 46 year old commercial photographer would like to talk to people in other countries. Speaks Danish and Swedish.

STEPHEN SARPER, 214 McCully St., Pittsburgh, Pa. 15216. Owns a Magnecord 1024 and a Sony 660 (stereo, 3¾ and 7½). Interested in classical music, audio film soundtrack music, medical subjects. Would like to hear from someone in the health profession.

DANTE VALERIO, 517 N. Spaulding Ave., Los Angeles, Cal. 90036. Owns a "Concord" 444 stereo three speed. Interested in 16 mm movies and photography. English, Spanish and Italian.

COMING NEXT ISSUE

A CASSETTE RECORDER FOR \$12.81?

ARE AIRLINE TAPES A GOOD BUY?

HOW TO EARN MONEY WITH YOUR TAPE
RECORDER

Circle 1 on Reader's Service Card →

Everybody bulls, bluffs and brags about their tape equipment.

Ampex would like to clear the air.

It seems like there are an awful lot of claims flying around. Higher this, better that, lower something else.

So, if you want to compare tape equipment, it's not easy. Because all you have to go by are the terribly impressive statistics everybody seems to be shouting about (frequency response, flutter and wow, signal-to-noise ratio, distortion level, etc.).

It makes the mind boggle.

Because it sounds like you're getting a professional sound studio for \$139 or so. Which is ridiculous.

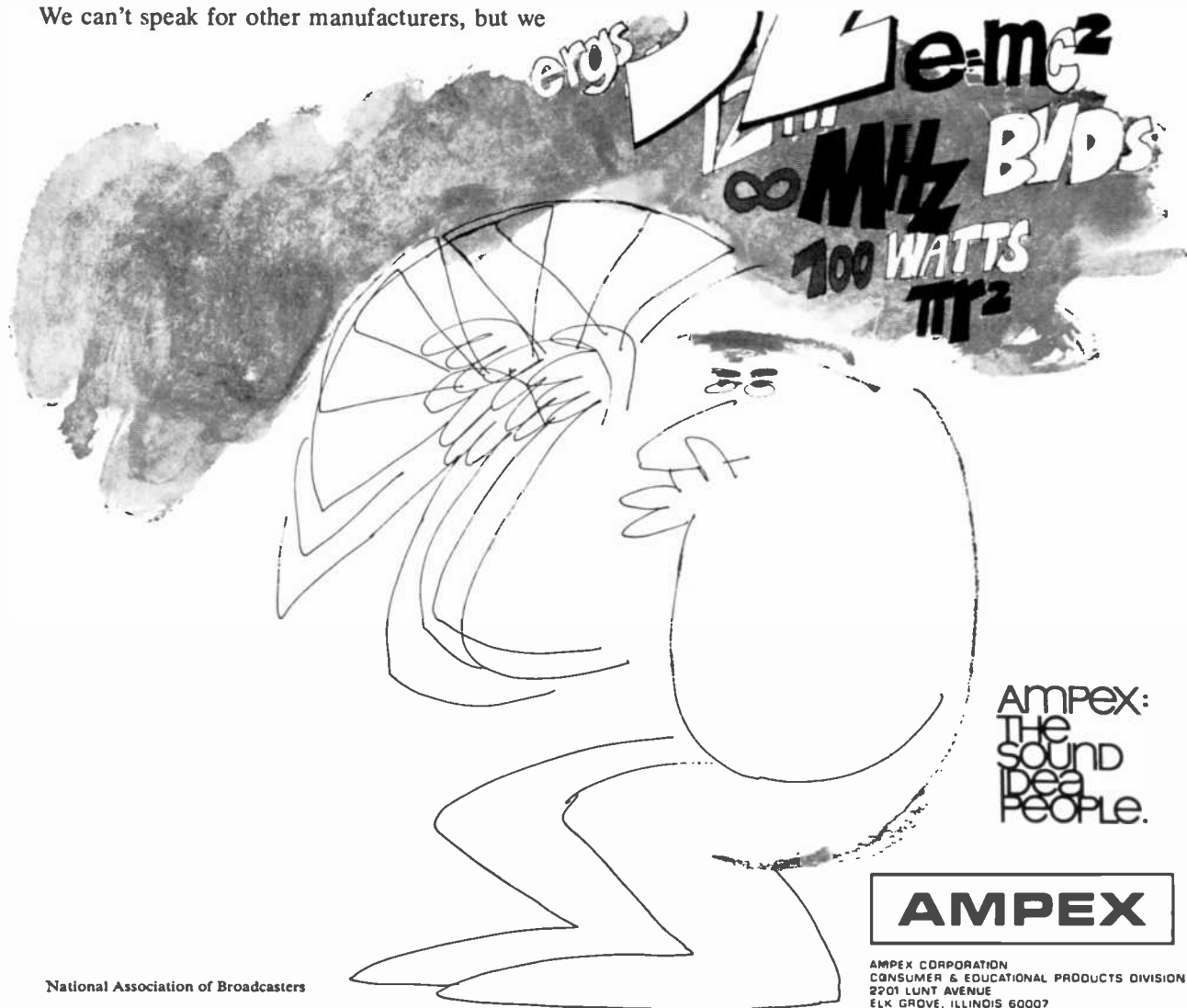
They get away with it because there's no one industry standard of comparison. So you really have no way of knowing if the specs are at all accurate.

We can't speak for other manufacturers, but we

sure can for ourselves. And what we've got to say is just this: every single Ampex spec you ever see will always be accurately and conservatively stated.

We go by the toughest standards in the world. Our own. In fact, reproducer test tapes, used by professional recording studios, are produced in Ampex's own test laboratories to N.A.B.* standards. We've got a big, professional, quality name to live up to and we're not about to bull, bluff or brag you into believing things that aren't.

Which is just another way of saying that you can really count on Ampex for honest quality and good old American ingenuity. No brag. Just fact.



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National Association of Broadcasters

Have a tape-in



When Bob Dylan wrote "Times they are a changin'" he probably meant it for everyone in the world except record lovers. You see, record lovers are record savers. A stubborn group who just won't face progress ...the new Uher 7000 tape deck.

The first four track tape deck designed to outperform any other in its price range as well as those at two and three times the price. (This was determined by an independent consumer laboratory survey, not us.)

Uher 7000 offers more than great music. No more

scratched records or worn out grooves. And you save money with tapes.

In addition, there are two speeds to give you hours and hours of enjoyment on one tape; sound on sound and full fingertip control for complete ease of operation.

These are just a few of the reasons why more and more music lovers are going with Uher. As for those record lovers, "Times they are a changin'."

Hear the 7000 at a franchised dealer or write for literature.

Uher 7000 by Martel The easy-to-love tape deck

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