

The Truth About 8 Track The Sounds of the Circus

tape

60c recording

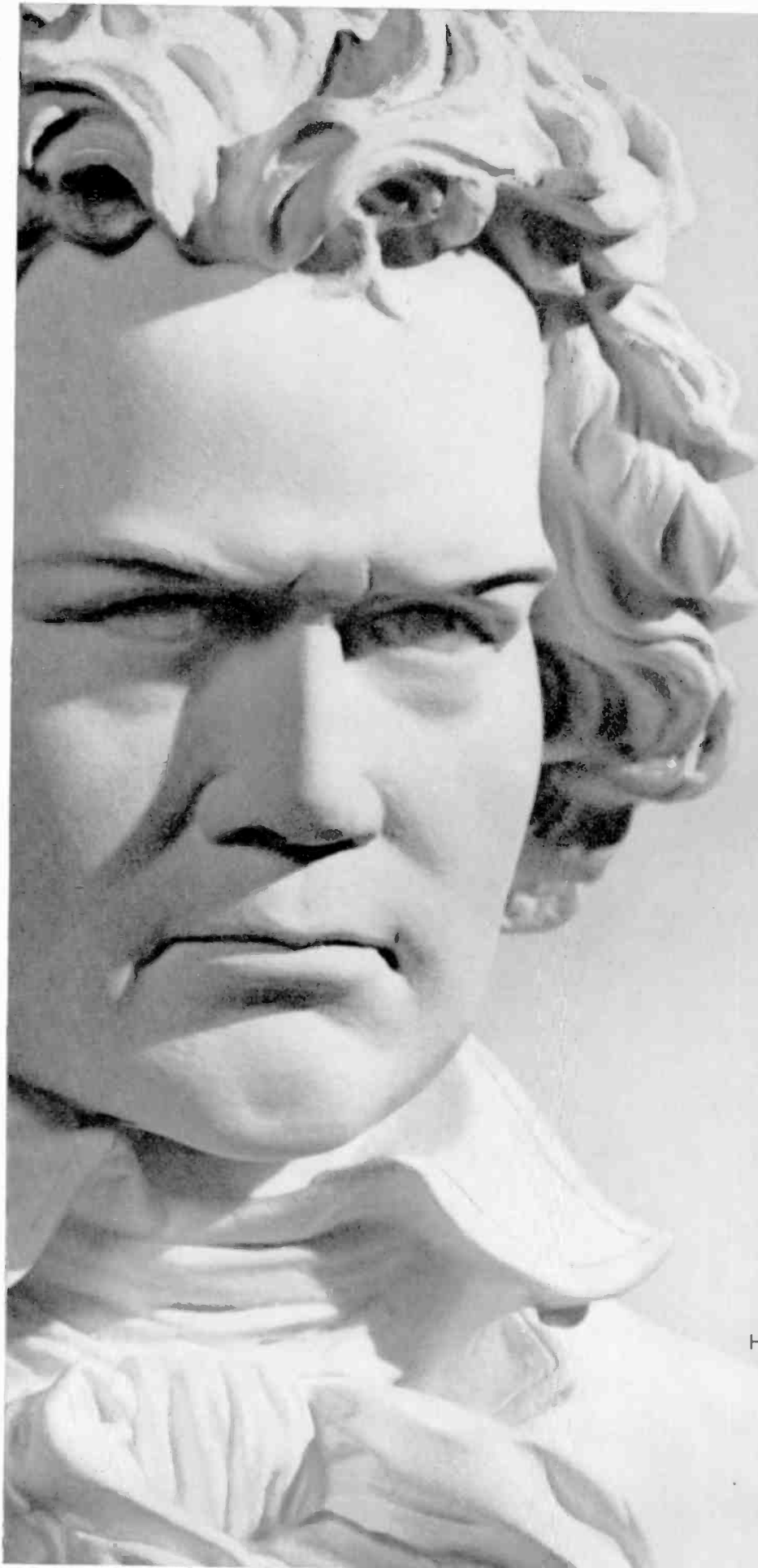
Vol. 13 No. 5



1210 R-871
MR ROY FERRIN
231 WOODLAND AVE
RUTHERFORD N J 07070

Tape Captures the Stars

6/29/67



How long will Beethoven be around?

A real long time — on pre-recorded tapes with a base of MYLAR*. Like blank tapes on a base of MYLAR, they contain no plasticizer, so they can't dry out or become brittle with age. They can be stored anywhere — indefinitely. That's why MYLAR is the base used for "play-in-car" hi-fi tapes.

Pre-recorded tapes represent an investment. Why not invest a little more for MYLAR and have the added insurance and protection of the strongest, longest-lasting tape base you can buy?

Make sure your favorite pre-recorded tapes are on a base of MYLAR polyester film. And look for the label on the box that says MYLAR.

How long will pre-recorded tapes of MYLAR last? Well, how long has Beethoven been around?

*Du Pont's registered trademark for its polyester film



Better Things for Better Living... through Chemistry

The Truth About 8 Track The Sounds of the Circus

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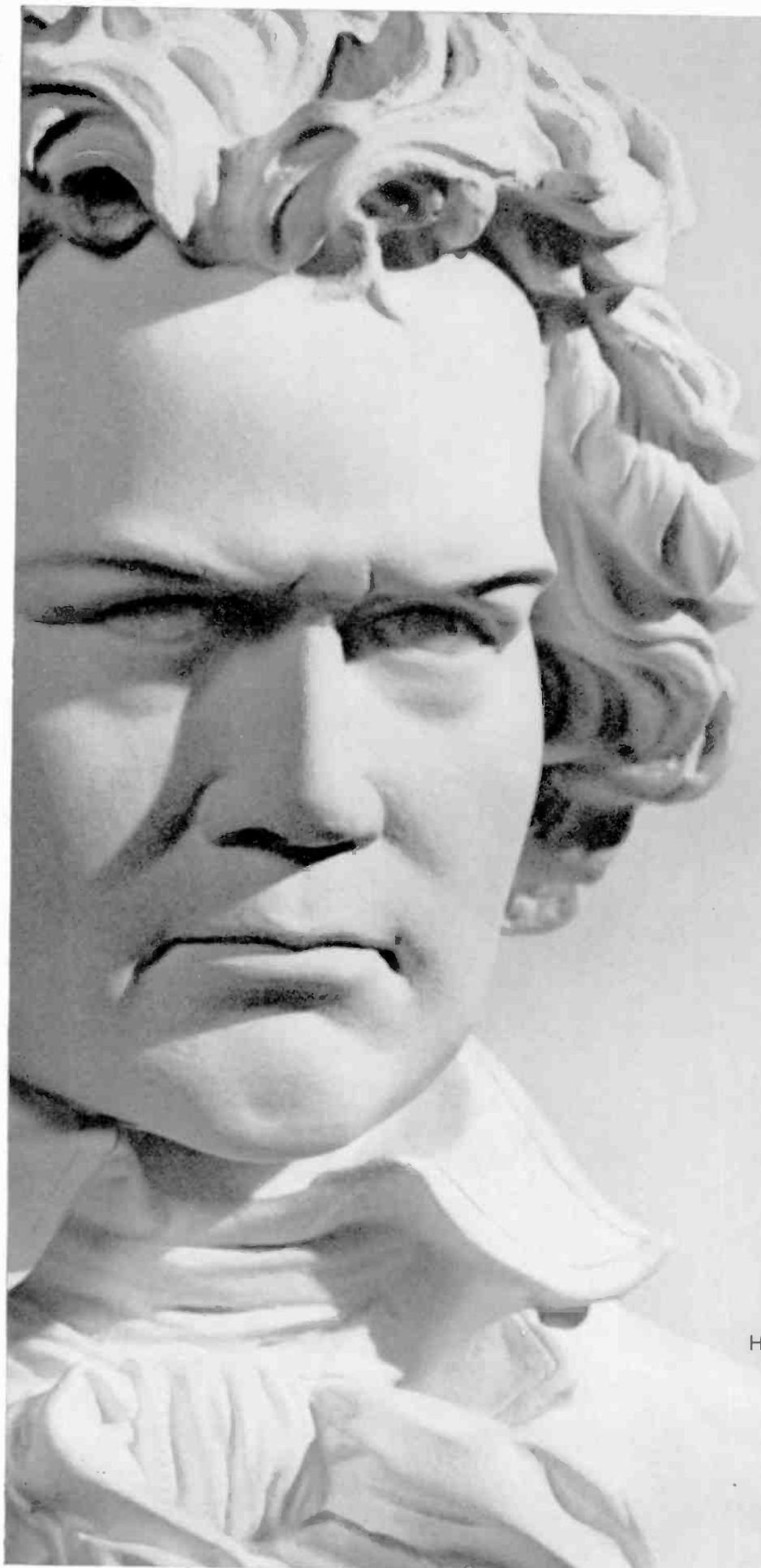
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*Du Pont's registered trademark for its polyester film



Better Things for Better Living... through Chemistry

THE 8-TRACK STEREO TAPE CARTRIDGE PLAYER OF YOUR CHOICE

FREE*

YOURS AS A GIFT JUST FOR JOINING NOW

Stereo Tape Club of America

*with one year membership and minimum tape purchase, six now and one a month for a year; speakers extra.



WHY WE GIVE YOU

THE FINEST 8-TRACK STEREO PLAYER FREE

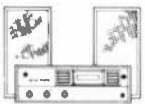
We are America's largest all-label, all-artist stereo tape cartridge club. We hope to win you over to the newest, most advanced, most convenient way to enjoy music in your home, car and office—with trouble-free, compact stereo tape cartridges that play continuously, switch tracks automatically, and last practically forever. They never scratch, warp or wear out. They never tangle or break.

If you like the system, you'll buy your stereo tape cartridges from us. You never pay more than regular price. You can pick free bonus tapes immediately, without waiting. You enjoy up to 50% savings on special offers.

To guarantee your continuing interest, the equipment must be fine enough to give brilliant high fidelity performance over many years of trouble-free service. That's why we give you our STEREO MATIC unit FREE. It's the best premium equipment. That's why we are willing to send it to you at no risk or obligation on your part. If you like it, KEEP IT. It's yours FREE just for buying stereo tape cartridges you would want to own anyway. If not, return it and your membership is cancelled. You pay nothing and owe nothing. To take advantage of this fabulous new membership offer—complete coupon and mail now.

PICK ONE FREE

NEWEST FINEST SOLID STATE AUTOMATIC 8-TRACK STEREO TAPE CARTRIDGE PLAYERS



\$114.95
reg. price

COMPLETE HOME SYSTEM

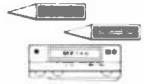
With built-in amplifier and 2 deluxe stereo speaker units in handsome walnut cabinets. **THE PLAYER IS FREE.** We will bill you only special member's price of \$24.95 for speakers. check HOME SYSTEM in coupon.



\$79.95
reg. price

HOME PLUG-IN SYSTEM

Pre-amplified model. Plugs into your present stereo record system. Beautiful walnut grain finish. **THE PLAYER IS FREE.** No speakers needed, plays through your own stereo system. check HOME PLUG-IN in coupon.



\$89.95
reg. price

DELUXE AUTO SYSTEM

Complete with easy installation kit and 2 deluxe flush mount speakers (no drilling holes). **THE PLAYER IS FREE.** We will bill you only special member's price of \$5.98 for speakers. check AUTO SYSTEM in coupon.



SELECT ANY 6 TO START MEMBERSHIP

Only Stereo Tape Club gives you full selection; all labels, all artists, all new releases.

POPULAR

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- 1330—A MAN ALONE, Frank Sinatra (Reprise) 6.98
- 1331—TAKE A LOT OF PRIDE, Dean Martin (Reprise) 6.98
- 1308—THE BEST OF EDDY ARNOLD, Eddy Arnold (RCA) 6.98
- 1309—LOOK AROUND, Sergio Mendes & Brasil 66 (A&M) 6.98
- 1333—CRYSTAL ILLUSIONS, S Mendes & Brasil 66 (A&M) 6.98
- 1311—THE BEST OF NANCY WILSON (Capitol) 6.98
- 1314—JOHNNY'S GREATEST HITS, Johnny Mathis (Columbia) 7.98
- 1316—ELVIS' GOLD RECORDS, Elvis Presley (RCA) 6.98
- 1319—WHEN YOU'RE SMILING, Nat King Cole (Pickwick) 6.98
- 1337—SOULFUL, Dionne Warwick (Scepter) 6.98
- 1324—PROMISES, PROMISES, Dionne Warwick (Scepter) 6.98
- 1325—HELP YOURSELF, Tom Jones (Parrott) 6.98
- 1328—THIS IS TOM JONES, Tom Jones (Parrott) 6.98
- 1326—AGE OF AQUARIUS, 5th Dimension (Liberty) 6.98
- 1332—FOR ONCE IN MY LIFE, Vikki Carr (Liberty) 6.98
- 1316—HONEY, Bobby Goldsboro (United Artists) 6.98
- 1334—TODAY, Bobby Goldsboro (United Artists) 6.98
- 1335—I'M ALL YOURS, BABY, Ray Charles (ABC) 6.98
- 2301—THE BEAT OF THE BRASS, Herb Alpert & T.B. (A&M) 6.98
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- 2307—ROGER WILLIAMS GREATEST HITS, (Kapp) 6.98
- 2302—A FISTFUL OF DOLLARS, Hugo Montenegro (RCA) 6.98
- 2315—A WARM SHADE OF IVY, Henry Mancini & Orch. (RCA) 6.98
- 8304—TO RUSSELL MY BROTHER, Bill Cosby (Warner Bros.) 6.98

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- 3307—DOORS, The Doors (Elektra) 6.98
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- 3336—SMASH HITS, The Jimi Hendrix Experience (Reprise) 6.98
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- 3339—HALLELUJAH, Canned Heat (Liberty) 6.98
- 3340—IN-A-GADDA-DA-VIDA, Iron Butterfly (Atco) 6.98
- 3341—SHOW, Temptations (Gordy) 6.98
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- 3343—SUITABLE FOR FRAMING, Three Dog Night (Dunhill) 6.98
- 3344—BECK-OLA, Jeff Beck (Epic) 6.98
- 3345—FELICIANO/10-23, Jose Feliciano (RCA) 6.98
- 3346—2525 (EXORCIUM & TERMINUS), Zager & Evans (RCA) 6.98
- 8302—BOOKENDS, Simon & Garfunkel (Columbia) 7.98
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- 8315—DARABAJAGAL, Donovan (Epic) 6.98

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- 4303—HANK WILLIAMS GREATEST HITS, (MGM) 6.98
- 4309—JOHNNY CASH AT FOLSOM PRISON, (Columbia) 6.98
- 4313—JOHNNY CASH AT SAN QUENTIN, (Columbia) 6.98
- 4312—THE SENSATIONAL CHARLIE PRIDE (RCA) 6.98
- 4314—FROM ELVIS IN MEMPHIS, Elvis Presley (RCA) 6.98

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- 5301—DOWN HERE ON GROUND, Wes Montgomery (A&M) 6.98
- 5307—THE BEST OF WES MONTGOMERY, (Verve) 6.98
- 5316—A DAY IN THE LIFE, Wes Montgomery (A&M) 6.98
- 5302—THE ELECTRIFYING EDDIE HARRIS, (Atlantic) 6.98
- 5305—UP POPS RAMSEY LEWIS, (Cadet) 6.98
- 5306—GROOVIN' WITH THE SOULFUL STRINGS, (Cadet) 6.98
- 5311—FOOL ON THE HILL, Sergio Mendes & Brasil 66 (A&M) 6.98
- 5312—MEMPHIS UNDERGROUND, Herbie Mann (A&M) 6.98
- 5313—SOULFUL STRUT, Young Holt Unlimited (Brunswick) 6.98
- 5314—AQUARIUS, Charlie Byrd (Columbia) 6.98
- 5315—MILES DAVIS' GREATEST HITS, (Columbia) 6.98

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- 6301—DR. ZHIVAGO, Original Sound Track (MGM) 7.98
- 6306—CAMELOT, Original Sound Track (Warner Bros.) 6.98
- 6310—HAIR, Original Broadway Cast (RCA) 7.98
- 6312—ROMEO & JULIETTE, Orig. Sound Track (Capitol) 6.98
- 6313—MIDNIGHT COWBOY, Orig. Sound Track (United Artists) 6.98
- 7301—MY FAVORITE CHOPIN, Van Cliburn (RCA) 6.98
- 7303—GERSHWIN RHAPSODY IN BLUE, L.S. Fest. Orch. (Loni) 6.98
- 7306—TCHAIKOVSKY: SWAN LAKE Fiedler & Boston Pops (RCA) 6.98
- 7311—SWITCHED ON BACH, (Columbia) 7.98
- 7313—2001: A SPACE ODYSSEY, Orig. Sound Track (MGM) 6.98
- 7314—BERNSTEIN'S GREATEST HITS, Bernstein-N.Y. Phil. (Col.) 7.98

SEND NO MONEY • JUST MAIL

Stereo Tape Club of America

P.O. Box 2986 Clinton, Iowa 52732

Please enroll me as a member and send the FREE Stereomatic 8-track tape cartridge player checked below.

- HOME SYSTEM (speakers \$24.95)
- HOME PLUG-IN (no speakers)
- AUTO SYSTEM (speakers \$5.98)

Also send the 6 stereo tape cartridge albums I am buying now to start membership. (Select 6 from list, print numbers below.)

Bill me for these. I may pay in 3 monthly installments if I wish, including mailing and handling. If I am not 100% delighted, I may return player and cartridges in 10 days and my membership will be cancelled. I owe nothing.

Name _____ Age _____

Address _____

City _____ State _____ Zip _____

Auto make & year _____

Phone _____ Spouse Name _____

Bank _____ Branch _____

Credit Ref. _____ Loc. _____

Credit Ref. _____ Loc. _____

Charge albums above to my credit card.

- BankAmericard Master Charge Interbank
- Acct. # _____ Diners Club

MY MAIN MUSICAL INTEREST IS (check one)

- Popular Rock & Folk Show & Classical

In addition to the 6 cartridges I am buying now to start my membership, I agree to purchase a cartridge a month during the coming year. (Albums you'll want to buy anyway; thousands to choose from.)

SIGNATURE
(REQUIRED)

1-232-12-12062

where fine recordings are made,



you'll find
koss esp-6
electrostatic
stereophones*

Now that Koss Electronics has developed Electrostatic Stereophones, it would be silly for recording studios, broadcasting stations, and sound stages to use anything else to monitor recordings. It's as simple as this: the new Koss ESP-6 Electrostatic Stereophones reproduce 9 of a possible 10 octaves the human ear can hear. That's twice as much sound as any other sound reproduction system.

How? That's simple, too. The ESP-6 employs principles of electrostatics formerly limited to very large, high-priced speaker systems like the impeccable Koss-Acoustech X system. Only now, since Koss engineers developed a method of self energizing elements, is it possible to employ electrostatics in tiny units. If you're interested in details on "the only practical way" for professionals to monitor recordings, write for complete specifications and free technical article, "An Adventure in Headphone Design."

model pro-4A
stereophones
\$50.00

model esp-6
stereophones*
\$95.00

Complete with fitted,
portable carrying case
and individually
measured response curve.



*Patents applied for



KOSS

KOSS ELECTRONICS INC.
2227 N. 31st Street • Milwaukee, Wis. 53208

Export: Koss Electronics S.r.l.
Via Bellini 7, 20054/Nova Milanese, Italia

Export Cable: Stereofone



tape

NOTES

Emergency Cassette Repairs

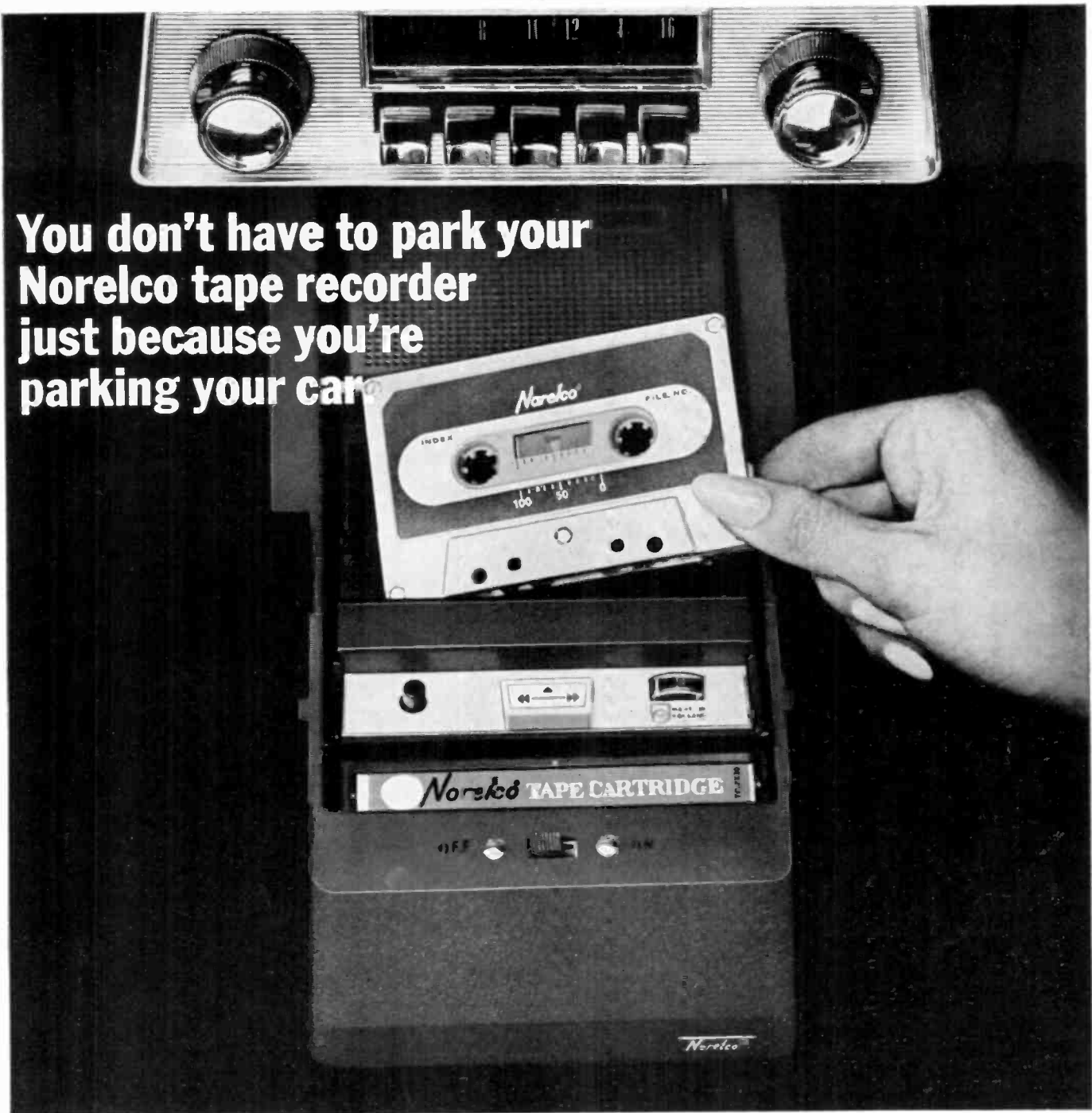
Contrary to what the salesman may tell you, cassettes do jam up from time to time. This usually happens most often with the lower-cost bargain cassettes, but it can (and has) happen with the high-priced spread as well. If it happens in a cassette that's held together with screws, fine and dandy; you just remove the screws, separate the cassette halves and hope that you don't spill the guts all over the floor. Ever try to rewind 1/7-inch-wide cassette tape by hand? If you never have, you're missing one of the truly invigorating experiences of life.

Assuming you have a steady hand and don't spill the beans, you can dismantle the troubled cassette fairly easily, snip out the jammed section of tape, splice, trim, and reassemble. Sometimes the leader will come loose from its captive hub. Replace this double width in the friction slot. If you must use glue, be sure none gets anywhere but in the hub slot. Otherwise, the cassette will never be the same again.

What about the cassettes that don't have screws holding them together? Throw 'em out? Not on your life. Pry the baby open with a penknife—carefully—working the knife blade down the crack in the edge, a little at a time. When the two halves of the clam shell finally separate, they may do it with some gusto, so be on the alert to avoid tape spillage. Make the repairs as above, reassemble the cassette and stick the two halves together with ordinary Scotch tape. Just don't cover any holes with the tape and you'll be all right.

W.G.S.

**You don't have to park your
Norelco tape recorder
just because you're
parking your car.**



The new Norelco Carry-Corder® Car-Mount™ does more than just ride around playing music through your car radio. It not only plays your own favorite home-recorded tapes, but when you park and get out, it gets out with you—to play and record anywhere.

The Norelco Carry-Corder Car-Mount plays *and records* in anything on wheels. And doesn't pick up static from your car's ignition system. Or drain electricity from the battery either. It has its very own power supply.

Which also means you can take it to a

party without having to *drive* it into someone's living room. It unplugs in a minute. It weighs only three pounds. And it has a shoulder strap for carrying it around. (If you have round shoulders, it will even fit into your coat pocket.)

You record or listen on handy snap-in cartridges that hold up to 60 minutes of *anything*. Bach. Beethoven. The Beatles. Even your wife's directions on how to get to her Uncle Manny's house. And if you stop by your Norelco Dealer's soon, he'll show you how to do hundreds of other fun things with a tape recorder, too.



Norelco®

North American Philips Company, Inc., High Fidelity Products Department, 100 East 42nd Street, New York, New York 10017

Circle 33 on Reader's Service Card

May-June 1966

Order Any Tape Reviewed in This Magazine At a 30% Discount

or...

Order any prerecorded reel-to-reel tape at 30 per cent below list price . . . any cartridge tape at 20 per cent below list.

Now—*for the first time*—you can obtain a free six-month trial membership in the one tape club that offers you:

- ⌘ EVERY LABEL
- ⌘ EVERY TYPE OF MUSIC
- ⌘ EVERY TAPE SPEED
- ⌘ EVERY CARTRIDGE TAPE LINE

Music sounds best on tape — and it's a sweeter sound when you save 30 per cent or more on every purchase. Order at home from the most comprehensive collection of prerecorded tapes available anywhere. No problems — ever. You order only what you want — when you want it — and pay the lowest prices with no strings attached.

With its concentrated purchasing power in the tape field, the Variety Tape Club offers you exclusive "super-special" discounts on 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.

The Variety Tape Club specializes in tapes exclusively to bring you the best buys in prerecorded tapes and tape cartridges.

To order your tapes or to obtain a six-month free trial membership, simply mail the coupon today.

VARIETY TAPE CLUB
507 Fifth Avenue
New York, New York 10017

Gentlemen:

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

I would also like to order the following tapes.....

I understand that all orders are processed within 48 hours after receipt.

Name.....

Address.....

City.....State.....Zip.....

Circle 39 on Reader's Service Card

tape

recording

JUNE, 1966

VOLUME, 13, NO. 5

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tape

CLUB NEWS

The big news this month is the announcement from World Tapes for Education of the first exchange of personal videotapes—and an international exchange at that. It all happened on March 17th when Mr. and Mrs. John Ramsey of Dallas, Texas received a videotape from Shin Tanaka of Kobe, Japan. The tapes were recorded on Sony Videocorders. While WTE feels that the cost of owning a videotape recorder is, at the moment, out of range for most tape club members, the idea of international exchanges of videotape should prove exciting and feasible for schools and other groups. Imagine the possibilities

of sending and receiving videotapes of plays or sketches illustrating characteristic dances and costumes of various countries. It's a good idea and this first exchange seems to be a prediction of things to come—and in the near future.

Thanks to all tape club members for the exceptionally fine response to the Pop Sounds Contest. Entries of all kinds are coming in. It's a great opportunity for members to experiment in groups or individually—and the more creative, the better. Deadline for all entries is September 15th and don't forget, if you are a member of a tape club, be sure to note it down

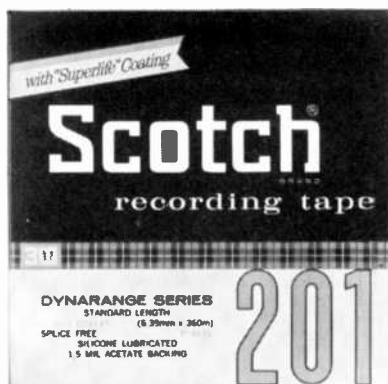
on your application. As a special bonus, TAPE RECORDING Magazine is awarding a lifetime subscription to any winner who is also a tape club member.

The Indiana Recording Club has announced its officers for 1966. President is Robert Cassman, Vice President is Robert Butterfield, Secretary is Helena Kish and Treasurer is William Endicott. Good luck to all.

The IRC reports many exciting activities scheduled for the coming months. Among them are radio programs made up by IRC members which will be distributed locally and nationally. This is an



New "Dynarange" Recording Tape records the same amount of music on half the tape



A tape so sensitive you can record at half the speed with no loss in fidelity. Your budget will applaud.

Now enjoy music the way you hoped it would sound . . . full, faithful, clear. Notice it particularly in the critical soprano or high frequency range. That's because SCOTCH® Brand "Dynarange" Series Recording Tape cuts background noise. It's so sensitive—you get the same full fidelity at slow $3\frac{3}{4}$ speed that you ordinarily hear only at $7\frac{1}{2}$ ips.

"Dynarange" costs a little more, but you need only buy half as much. You can save 25% or more in your tape costs. And if you use "Dynarange" at $7\frac{1}{2}$ ips, you'll hear new fidelity you didn't know your recorder had.

"Superlife" Coating gives "Dynarange" 15 times the wear life of ordinary tapes. Low rub-off keeps recorder heads clean. Lifetime Silicone lubrication smooths tape travel, protects against head wear. Ask your dealer for a demonstration of "Dynarange" Tape now.

"SCOTCH" AND THE PLAID DESIGN ARE REGISTERED TRADEMARKS OF 3M COMPANY, ST. PAUL, MINNESOTA 55119 © 1966. 3M CO.

Magnetic Products Division **3M** COMPANY

exceptionally good idea for other tape clubs as well. Radio stations are always hungry for interesting and original material and it's a good way to introduce the general public to the fun of taping.

IRC is also putting together a "trip around the world" on tape which they will donate to the local school for the blind. A related effort on a much larger scale has been undertaken by the Tarver Memorial Fund, which is a special activity supported by The Voice-spondence Club of Noel, Virginia. The Fund runs the Smith-McKie Memorial Library which contains about 2000 tapes of magazines and

books, together with a great many performances and other productions by blind and handicapped. These are distributed free of cost and on loan to blind borrowers all over the world. Recently the Fund took over the library activities of Ways and Means for the Blind, Inc. of Augusta, Georgia.

A welcome back to IVY (International Voices of Youth) which has returned to the ranks of active tape clubs after a period of reorganization. IVY was founded in 1962 with the aim of promoting friendship throughout the world by the use of magnetic tape. New

executive director is John W. Cummings of San Francisco; director of operations is George Swift of Selma, Alabama; European director is John Perriam of Hythe, Kent, England. IVY provides a monthly newsletter and the use of books and tapes in its library to club members. Those interested can write International Voices of Youth, P.O. Box 256, Selma, Alabama.

Other tape clubs we've heard from recently include: Teen Tape Club which circulates a round-robin tape every month to all members on topics of interest. It's lo-
(Continued on page 50)

<h1>88</h1> <h2>STEREO</h2> <h3>COMPACT</h3> <p>SOUND AS GOOD</p>		<h1>880</h1> <h2>STEREO</h2> <h3>PORTABLE</h3> <p>AS THEY LOOK</p>
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The choice of music connoisseurs who demand the ultimate in full stereo fidelity. Though compact in size these Viking tape recorders set a standard of excellence for dramatic, life-like realism in recording quality. Compare feature for feature, size, quality, styling—and dollar for dollar you too will prefer a Viking tape recorder.

Choose an 88 Stereo Compact in the traditional cabinet with folding cover at left, or select the modern enclosure, center, to match your music system. For portability Viking recommends the 880 Stereo at right, complete with detachable speakers.



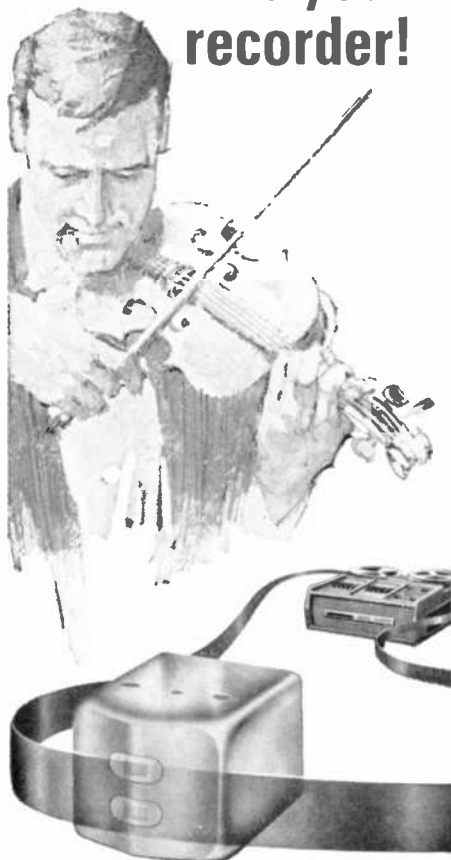
An 88 Stereo Compact costs less than \$340.00
Walnut cabinets extra.

880 Stereo portable recorder less than \$440.00
At better hi-fi dealers most everywhere.

 **Viking** OF MINNEAPOLIS®
9600 Aldrich Ave S Minneapolis, Minnesota, 55420



**Your tape head
is wearing
every time you
use your
recorder!**



**The question is —
how much is it worn?**

You can check for head wear by looking for these obvious defects:

1. Grooves — worn into the head by the tape. Easily recognized by lightly running your finger across the face of the head.
2. Pitting or Open Gap—which can be seen. If pitting is noticeable or if you see a vertical line dividing pole pieces, intimate contact has already been lost and the head must be replaced!

Protect your large investment in tape and equipment by replacing worn heads with full fidelity Nortronics precision quality replacement heads — Remember the tape head is the heart of your recorder!



Restore the brilliant realism of tape that you have gradually lost . . . see your local Nortronics dealer for factory recommended replacement heads!

Nortronics®

Circle 34 on Reader's Service Card

tape

NOTES

Last December we discussed short wave as a source for tape program material, off-the-beaten-track music and educational items (like a once-a-month course in Swedish or a lecture on Soviet farm production last year). At the time, we noted, no truly high fidelity component-quality short wave tuner was on the market. When Fisher Radio announced its new R-200-B early this year, we rushed right out to get one.

The R-200-B actually is an AM-FM stereo tuner with two short wave bands. Fully transistorized, it retails for \$349.50, which may seem a lot for a tuner when you consider that you can get an ordinary SW receiver for less than \$50 and a good transistor AM-FM stereo tuner for less than \$200.

We unpacked the tuner and hooked the R-200-B into our high fidelity component system according to the manufacturer's instructions. Then we followed Fisher's advice, took a 10-foot length of lamp cord, stripped both ends, split it down the middle and attached one end to the ground tap, another to the SW antenna tap. We then wired the ground to a radiator and extended the antenna wire out a city apartment window.

Within minutes, we, who have trouble picking up Channel Two from the Empire State Building less than three miles away, were pulling in Radio Moscow, Radio Havana, Radio Prague, the BBC, the Canadian Broadcasting Corporation, CFRB in Toronto, CFCF in Montreal and CHNS in Halifax, Canada, among those we could identify.

We noted in December that tuning in a short wave station is somewhat difficult until you get the hang of it, that there are loud squawks within the SW band, and that stations have a tendency to fade. It's here that the R-200-B

makes a real contribution. Fisher has split the short wave band into two tuning bands—one encompassing the highly crowded 49 meter band and the other covering the almost-as-crowded 31, 25 and 19 meter bands. This gives each station more dial space than on the ordinary SW tuner, and simplifies dialing. Circuit design subdues some of the squeals and squawks, although we found the tuner almost as sensitive to electrical interference as most SW receivers. We found considerably less fading than usual on the Fisher unit. Once you lock into a station, you can hear most of it, although there is some fading. Locking into a station is easy, too. A control expands stations to make them easier to detect when dialing. Once you happen on a station you like, you can turn the switch to "normal" or "sharp", and tune it in accurately to get the maximum signal.

Taping from the R-200-B can be done directly from two outputs on the rear panel, although we'd recommend feeding the signal through a control amplifier so you can hear what you're taping. We found that a station like Radio Moscow, properly tuned in, provides as strong a signal as a local AM station, even when fed directly from the tuner. The circuit design improvements have a distinct effect on tapes made off the air. Comparing some BBC tapes made from the Fisher with those made last fall on a conventional receiver, we noticed very much less fading, fuller frequency response (the sound quality at its best is comparable to that from a good local AM radio station with the Fisher, while with earlier receivers it tended to sound tinny), less interference from atmosphere and other stations, and less overall noise.

(Continued on page 50)

Plain Talk from Kodak about tape:

Giving your tape library a longer prime of life

How long can you keep a recorded tape? As of today, nobody knows for sure. Recording companies have tapes dating back to the late 1940s that are still in fine shape. Actually, the aging problem for tape is somewhat akin to the ones faced by movie-makers. Their problems are tougher, though . . . movie-makers have to worry about latent chemical reactions, greater mechanical strains, etc. And yet, we can see movies made more than a half century ago if the films have been given proper care and expert duping. Like photographic films, many audio tapes are made on ace-

goes for tapes. One obvious safeguard is to keep tapes away from strong magnetic sources like large electric motors or transformers which could demagnetize a recording.

Keep it clean. Tapes hate dirt just as much as regular records do. Thanks to sturdy, one-piece construction, Kodak's new "library décor" box helps keep dirt out . . . won't fall apart over the years as conventional tape boxes sometimes do. And this new box looks better. Play it clean too, of course. Clean your recorder heads, capstans, rollers and guides regularly with a cotton swab moistened with one of

keep your tapes in the "tails out" format rather than rewinding them. The uneven winding induced in the tape by fast rewinding can cause physical warping of the tape over a period of time. Here too, you're better off with KODAK Tapes because KODAK 5" and 7" Thread-Easy Reels are of dynamically balanced, one-piece construction. This gives you freedom from wobbles and pulsations on both "record" and "rewind". . . keeps the tape under smoother tension . . . just what the doctor ordered for long tape life. The need for smooth winding can not be overemphasized.

Last but not least, it's a good idea to dupe your really old tape recordings onto fresh KODAK Tape in order to standardize on KODAK Tape quality. That's an interesting subject all by itself, and we'll try to devote a "Plain Talk" to it soon!

KODAK Tapes on DUROL and polyester bases are available at electronic, camera and department stores. To get the most out of your tape system, send for free 24-page "Plain Talk" booklet which covers the major aspects of tape performance. Write Department 940, Eastman Kodak Company, Rochester, N. Y. 14650.



tate base. Ours is Kodak's famous DUROL Base, the stronger, tougher triacetate (we also make KODAK Tapes with a tempered polyester base for extra toughness or for long-play applications). Lab tests show that DUROL Base holds up as well as photographic film. So . . . tape wise, there's no reason your great grandchildren won't be able to enjoy your present efforts.

T.L.C. makes the big difference. Tender loving care is a must when saving anything worthwhile. The same

the commercial cleaners sold for that purpose. Use a degausser periodically to remove any magnetization of recording heads.

Keep it cool. Tapes should be kept away from extremes of temperature and humidity. High temperatures may affect the plastic support and increase the possibility of print-through . . . the transfer of magnetic signals from one layer of tape to the next.

Keep it "backwards." For truly valuable recordings, a good trick is to



EASTMAN KODAK COMPANY, Rochester, N. Y.

Circle 28 on Reader's Service Card

Have Tape Recorder Will Travel

by Fred Robbins



Burt Lancaster records his impressions of Acquigny between scenes during the shooting of "The Train".

The first one must have weighed about 35 lbs. It was just a big box and didn't even have a handle—you had to pick it up with both hands, which was like carrying a case of soda, but there were no bubbles, except on the tape itself, which at that time was paper coated on one side. Every Friday afternoon in that winter of 1947, I would carry that box on the train to Baltimore to spend the waning weekends of his life with my father, sitting with him, talking with him and recording all those precious conversations on the newly invented miracle—the tape recorder.

That was 19 years ago and hearing those tapes today is unbelievable—like a flashback in a movie and it just can't be that long ago.

Fast dissolve—to the top of a villa in Capri, 100 feet above the sea, overlooking the Faraglione rocks. The scene is a Brigitte Bardot movie "Contempt." To get there was a half hour boat ride around the island from the Marina Grande,

the main harbor, a climb up a steep incline or rocky steps to what is surely one of the world's most breathtaking sights—and I don't mean Miss Bardot, though she isn't exactly chopped liver either, or should I say crepes suzettes.

That 35 lb. box is now a shoulder job—only eight lbs.—that made the same trip every day for five days, and by then it seemed to me that BB was trying to live up to the title of her picture, as far as I was concerned. Because that's how long it took—after promises and promises—before she sat down with me for what I thought had been a carefully prearranged interview. Even then, she gave little of herself, and in answer to all those who want to know "what was she like," she is shy, introverted, like a distrustful kitten—and adorable. She is anything but her movie image and indeed this is the reason she was so long in coming to the U.S. She is afraid of crowds and photographers.

He was most circumspect, kept referring to her as Miss Taylor . . .

What a contrast to Claudia Cardinale, who taped up a storm in her deliciously fractured English in the back of a limousine, as we drove to the set of "The Centurions" in Madrid, in which she co-stars with Anthony Quinn and Alain Delon. She is warm, bubbly, sensuous and serious about her work.

I didn't have to introduce my tape recorder to Quinn, because he had the same model sitting in a corner of his magnificent villa on the outskirts of Madrid—unused—and I had to show him how to work it. Actually the recorder, the Uher 4000, is extremely easy to use. I chose it because of its light weight (only eight pounds) and because of its versatility. Apparently it was the versatility which threw Quinn. The recorder can operate with ordinary flashlight batteries, with its own six-volt rechargeable battery, or directly from house current with the aid of a converter. The converter doubles as a battery recharger.



Every job has its difficulties, as this shot will no doubt serve to illustrate.



In Hollywood, with David McCallum, star of "The Man from Uncle" television series.

But I didn't have to tell him what to say about himself. We've talked on tape many times—on the set of "Behold The Pale Horse" in Paris, at the after-theatre party of "Zorba The Greek" in New York, and on his picture with Sophia Loren "Black Orchid" in Hollywood.

Then there was "Cleopatra" in Cinecitta. I was there the very day *the* "news" broke out, but you wouldn't know it from listening to my interview with Richard Burton. He was most circumspect, kept referring to her as Miss Taylor, though he sang her praises as an actress in no uncertain terms. Liz listened to his every word and was amazed at the reproduction of his mellifluous voice when I played it back.

Hollywood-On-The-Tiber

We have been in Italy many times—my tape recorder and I, recording such artists as Rex Harrison, Charlton Heston, Diane Cilento, Sue Lyon, Gina Lollobrigida, Sophia Loren and Marcello

Have Tape Recorder, Will Travel



I taped Liz Taylor as news of her romance was breaking from Bombay to Brooklyn.

Mastroianni in the deepest, grimmest back-alley of Naples for "Yesterday, Today And Tomorrow." Her dressing room was someone's home—and if you know the poor section of Naples, you know that that is just one dark room with an open doorway and the barest furniture, which sleeps a whole family. The people on the street knew she was Sophia Loren, but she was one of them—no airs, talking and laughing with the kids between takes and chatting freely with her fellow-Neapolitans, with the clothes drying and flying overhead, the rather pungent cooking odors permeating the alley, and the shouting and screaming of any Neapolitan street scene. She indeed looked like she was ready to go inside and cook dinner for her big family. She maintains that she was and still is one of them, and working in those back-alleys is just like coming home.

Mastroianni joined us. His English is not very good, but his charm makes up for it.

Today's tape recorders—compact, portable, unobtrusive and battery-operated—can go anywhere you can. We've turned ours on in the strangest places: on top of an orthodox monastery in the Valley of the Cross, near Jerusalem, when Otto Preminger was filming "Exodus." You can hear the wind on tape—blowing through the eucalyptus trees—and in the background Preminger's precise commands to the company. Then there was Greece—"Never on Sunday" and Melina Mercouri)—Honolulu (Preminger's "In Harm's Way" Acquigny (100 kilometers outside Paris

with Burt Lancaster, dirty and sweaty, at a railroad siding, during breaks on "The Train"), Acapulco (at Teddy Stauffer's incredible Villa Vera, talking to Albert Finney, who sat in the pool fully dressed in trousers and shirt, because he hadn't brought his swimming trunks).

There was no screaming when we talked with The Beatles on the beach of Paradise Island in Nassau during filming of "Help." The boys are delightfully irreverent and abstract in their sense of humor. Their musical taste is very definite—they dig Peggy Lee, but not Sinatra, only some of his arrangements, nor Tony Bennett or Steve Lawrence, but they do think Ella Fitzgerald is the greatest. You can't get a straight answer out of them to save your life—only nonsequiturs and abstract remarks.

It's not all travel and glamor at 7½ inches per second. There was that time in Berlin, covering "Escape From East Berlin" with Don Murray and Christine Kaufman that I got bitten by a ferocious German shepherd on the set of the picture. Although director Robert Siodmak assured me the animal was docile, I had an enormous bruise for a month to prove he wasn't. Or could it have been my tape recorder that infuriated him so, made in Germany though it was?

Taping against time is nervewracking—having to be back in New York for a show at a certain time and coping with the moods, vagaries and schedules of the various stars presents a constant problem.

I should mention that the Uher is reserved for trips abroad. When I tape on location at home,



Maurice Chevalier's charm never diminishes.

There was no screaming when we talked with the Beatles on the beach of Paradise Island.



In Paradise Island I taped the irreverent and abstract Beatles while they were making "Help".

I use a Midgetape recorder with an AKG mike—it weighs a bit more, but there is a slight improvement in fidelity. What a difference in the sound either one produces from the sound of that 1947 model! Today's tapes offer a great deal of latitude, too. In the good old days, we were limited to 15 minutes' recording time on a five-inch reel at 7½ ips. In most cases that was adequate. But every once in a while, you'd come across a star who really had something to say. When I'd come to the end of the reel, either I might lose something important or the subject would lose his chain of thought. Nowadays, it's possible to get up to an hour without interruption—and very few interview subjects need that much time. Today's extra thin tapes have made it possible to wind 1200, 1800 or even 2400 feet on a reel that used to hold 600 feet. However I, like most broadcasters, prefer to stick with 1½ mil acetate because of its general reliability, its ease of editing and, in the quantities in which I use it, its economy.

The World's The Stage

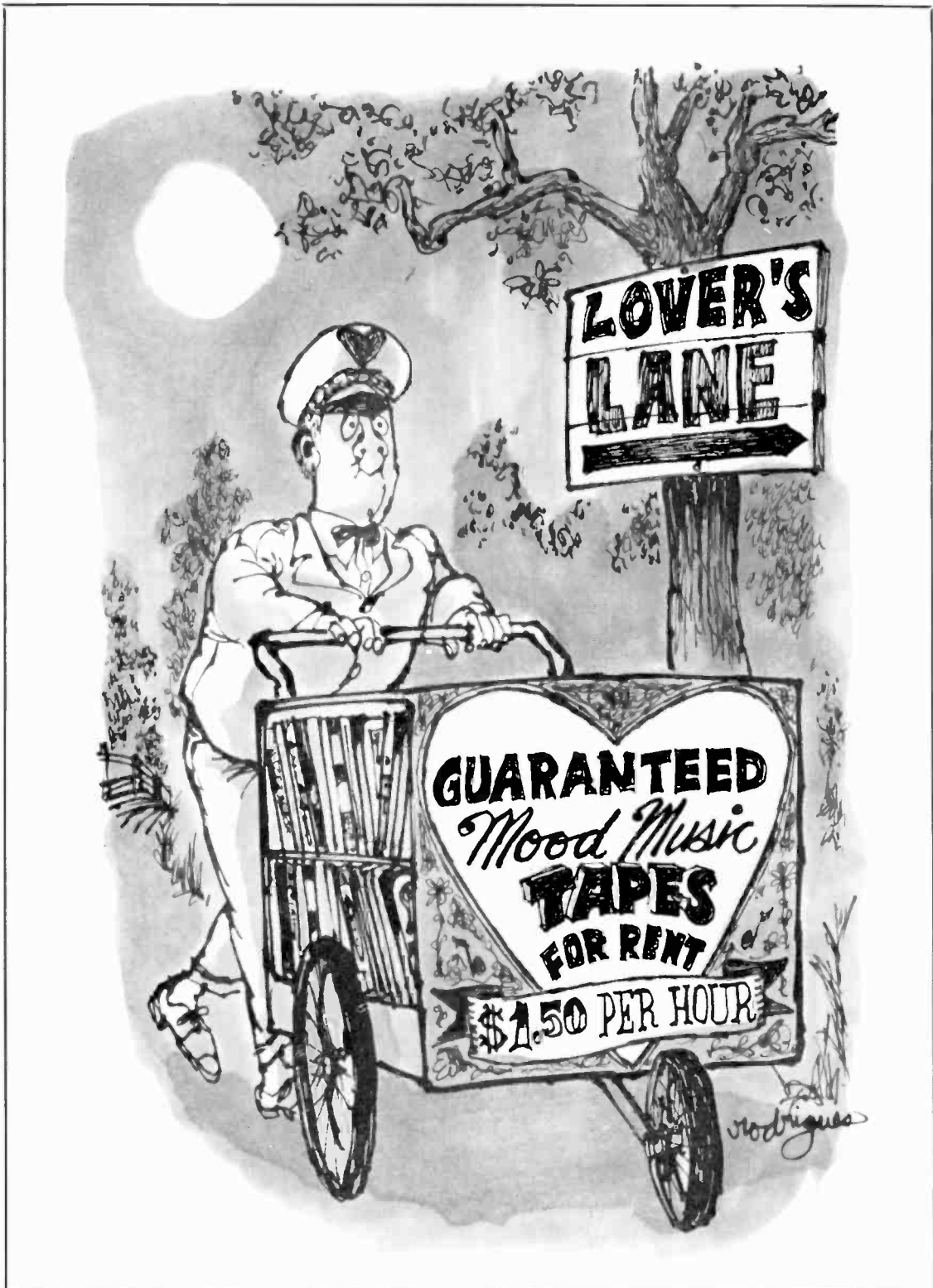
Times have changed. Mobility is the thing and you go where the stars go—and they are all over. You do Romy Schneider in Munich, Lana Turner in Mexico City, Peter O'Toole in the back of a Rolls on the way to Shepperton Studios in London, John Wayne in San Antonio, Peter Sellers and Brett Eklund in their villa outside Rome, Rod Taylor in the slums of Dublin for "Young Cassidy," Julie Andrews in the Mirabelle

Gardens in the enchanted city of Salzburg during "The Sound of Music," Audrey Hepburn in Paris, Maria Schell in Lugano, Kirk Douglas in Honolulu, Charlton Heston and Richard Harris in Durango, Mexico.

The sky's the limit. And talking about the sky—that's where I've done some of my best interviews—Mel Ferrer on the way from Zurich to Rome, Ringo Starr in the Beatles' chartered jet from Nassau to London (they let me off in New York), Joan Collins in a plane from London to Rome, and Paul Newman in an Alitalia jet on the way back to New York from the Venice Film Festival.

You can't beat planes for interviews—you've got your subject's undivided attention and they've got no place to go.

Actually, the name of my show, "Assignment Hollywood," is a misnomer, because today Hollywood is a state of mind and its all over the world. Pictures *are* and more and more *will* be made everywhere. It's the movies' way of giving you more than you get on TV, which itself is taking its cue from Hollywood and making the international scene as well. Sure, there's plenty of action in Hollywood, where we've taped Doris Day, Tony Curtis, Jack Lemmon, David Janssen, David McCallum, Robert Vaughn, Shirley MacLaine and many more, but if you want to be where the action is—and the action is where the celebrities are—you've got to have your passport up-to-date and your portable tape recorder ready—to travel.



The Pros and Cons of Tape Cartridge Players For Auto and Home Use

by Frank Peters

There's been a lot of talk about continuous loop tape players lately — and a lot of misinformation. This article may help set the record straight.

The big interest in continuous-loop auto and home cartridge players has spawned a lot of questions on the part of those interested in buying such machines. This same interest has led to considerable speculation about the merits of the players. Additionally, many allegations have been made about the units and their cartridges, all too frequently by sources with a dearth of correct information.

TRM has been fielding many of the questions and allegations and attempting to provide the right answers to individuals concerned enough to write to us. We now feel all our readers should be appraised of these matters.

To do so, we decided to bring in the experts—the people who produce auto and home tape players and their continuous loop cartridges, and the people who sell them. Where we were able to indicate specific companies and spokesmen we have done so gratefully. In an industry that is burgeoning so fast it is surprising how close-mouthed its individual members are. To others who provided us with information on a non-attribution basis because of company policies, we extend deep thanks.

Following are some of the questions and allegations posed by the growth of the auto cartridge player:

1... Do eight-track auto cartridge tape players lose their head alignment quickly and cause crosstalk?

2... Do auto tape player tape heads soon become coated with oxide and cause drop-outs of sound and poor reproduction? Is cleaning of the heads virtually impossible for the average motorist?

3... Is it possible to record your own program material for use in eight-track stereo cartridge players? Can it be done in four-track stereo?

4... Is it true that eight-track cartridges "gunk

up", causing malfunction. Can such gunked-up tapes be cleaned?

5... Are glove compartments the right or wrong place to store auto cartridge tapes?

6... Are auto tape players an invitation to break-ins and thievery?

Here are the answers, as obtained by Tape Recording from members of the industry.

Number 1—Misalignment and crosstalk: "This is a lot of nonsense," says Larry Finley, president of Interational Tape Cartridge Corp., major supplier of continuous loop auto cartridges in the three main configurations. "Eight-track players don't lose their alignment. Heads just don't get shaken out of alignment, even after a car has been driven a lot. Remember, the manufacturers went to a lot of expense to check out the feasibility of the eight-track system. And they put the units and the cartridges through a lot of 'wash-board road' tests. They didn't commit themselves and thousands of dealers to a product they weren't sure of.

"If the player is out of alignment it was out of alignment when it was delivered by the manufacturer. Like any other product, it is possible for a 'lemon' to slip through production."

Alan Bayley, president of General Recorded Tape, another tape cartridge duplicator, told TAPE RECORDING essentially the same thing, "The heads are too secure to be knocked out of alignment."

Robert Harris, veteran electronic product designer and national tape recorder marketing executive for Symphonic Radio and Electronic Corp. disagrees with both. "Continuous loop players can lose their alignment. But it can be fixed, in some cases very easily." He cited the Motorola-made home machines as a prime example.

Tape Cartridges

Lear-Jet "hand-on" auto players and home players can also be aligned according to an RCA engineering source. "The instruction sheet indicates that turning screw Number 52 will permit perfect head alignment," he noted. A check of a Lear-Jet home player disclosed that the alignment screw head was painted red for easy identification.

The RCA source also noted that misalignment sometimes resulted from the improper installation of some hang-on players. "To play properly the units must be installed with certain angle limitations," he said. "If they are installed at too-sharp angles, improper performance will result with some machines."

As for cross-talk, Mr. Finley noted that "eight-track is a headache to duplicate because of the

close tolerances. But ITCC and other companies have virtually licked what was once a serious problem. Our company's reject rate is now at the 1½ per cent level." "Actually," he went on, "We have fewer returns of eight-track material than we do of four-track." RCA, which produces only eight-track cartridges for auto use, revealed that its reject rate is well under two per cent. William Hack, president of Audio Devices, a tape producer, claims that the quality of eight-track auto tapes is rapidly approaching the quality level of long play records. Bayley agrees that eight-track duplicating is difficult, but that good recordings are possible by close supervision and rigid quality control.

Refinements have taken place in the industry to prevent cross-talk in the tapes themselves, Mr. Finley noted. "We use a one-inch mastering tape so that each track is far enough away from another so that what is fed to the duplicated tape is absolutely free of channel overlap," he said.

Mr. Harris, whose firm has been testing dozens of machines and cartridges as part of its approach to selection of a final product, had this to say on the subject of cross-talk:

"After misalignment, this is the next problem. It is not uncommon for tape dubbers to put out tapes with inherent cross-talk. We find it quite often. No company is perfect in this respect. And with some companies, the quality of their dubbing varies all over the lot." He added that cross-talk was clearly visible when suspected tapes were treated with a solution that showed the actual magnetization of the tracks. "The only thing you can do is return the tape for a good one," he suggested.

Some tape industry members believe that firms which dub their tapes directly in the cartridges are more likely to produce units with cross-talk than those who work their dubbings on a reel-to-reel basis, then load the cartridges with the recorded tape.

Number 2—Oxide accumulations, head cleaning: Auto players are no different in this respect. They require cleaning every now and then for optimum reproduction.

As for the ease of cleaning, most players provide access to the heads for cleaning with a "Q" tip (a narrow wood stick with cotton wrapped around it) and head cleaning fluid.

A check of several machines by TAPE RECORDING revealed that the Lear-Jet eight-track auto player provides a hole under the unit through which a Q tip can be inserted for cleaning of the heads. (The Lear home unit does not provide such access.) The Taiko (Japanese-made)



That's eight dollars to repair the generator, 14 dollars for a lube and tune up and 23 dollars to remove all that tape from your carburetor!

player available under that brand name and other designations has easy access to the playback heads. The Autophonic player is also easy to clean. But not the "Portatape" from the Tele-Pro. There is no side, bottom or top access to the head of this machine. The head must be cleaned from a "straight-on" position and a certain amount of swabbing is necessary to completely encompass the head.

However, the head cleaning is basically not much harder than with many audio tape recorders which require removal of one or more screws to lift the headplate so that the user can actually see the heads and properly clean them.

ITCC is approaching the head cleaning problem with a special eight-track tape designed to do just that. It is also looking into the possibility of making such a tape for four-track use.

One engineer pointed out that oxide does not accumulate on moveable eight-track heads, with the tape effectively cleaning itself as a result of new positioning of the tape when the head is swung into a new position.

TAPE RECORDING feels that head demagnetization may be a bigger headache with auto players and feels that manufacturers will have to come up with new configurations for demagnetizers to fit the narrow apertures through which the user must insert the device. This might be achieved via a wide selection of tips from which the user could select a tip that would work best with his particular machine.

Demagnetization will also pose its own special problem of access to a current source to operate the unit. Big-city dwellers might find this troublesome if they have no garage. Manufacturers might be able to design a demagnetizer that works off the auto battery. Where power is not available, it may be feasible to remove the machine and bring it into the house for treatment. Or, someday . . . the user might merely swing into a service station specializing in auto players and say "Demagnetize my machine, please."

Number 3—Recording your own programs: For the moment, the set owner will be better off buying recorded tapes rather than trying to record his own. First off, no traditional auto player provides the recording facility. Few home players provide the record facility. The all-purpose cartridge recorders adaptable to auto use do provide recording capability in monophonic form.

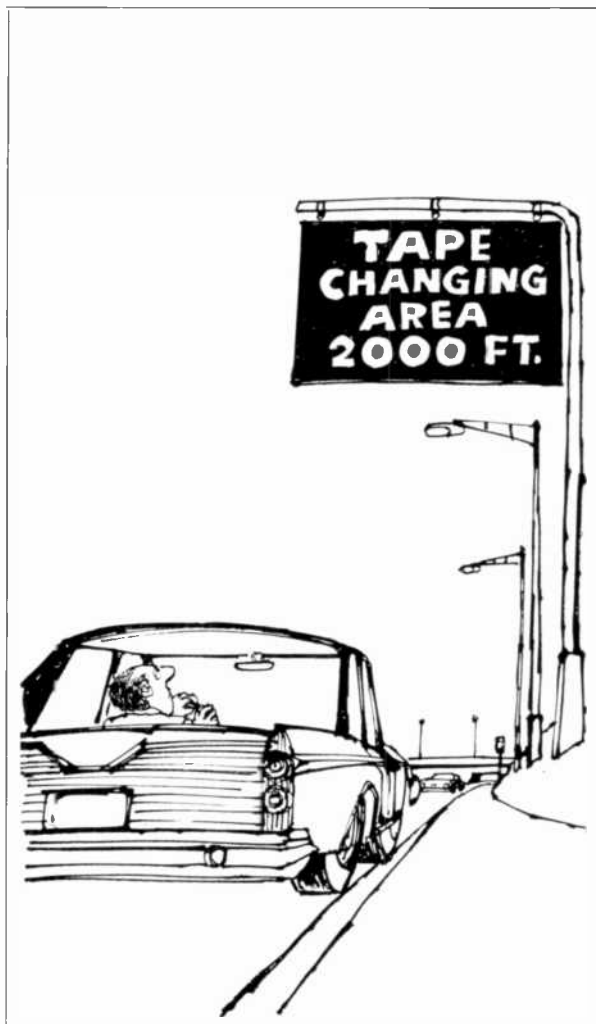
As one industry source put it, "How many people—except the died-in-the-wool hobbyists actually record their own programs with reel-to-reel recorders?"

This, in TAPE RECORDING's opinion is not

a satisfactory answer. However purchasers of auto players have the freedom of choice; they don't have to buy one of the units if the recording aspect is of such great importance. Most purchasers have their eyes wide open and are fully aware that the traditional auto units are limited to playback use only.

However, it is possible to record tapes for the auto players—if you have the patience and the time. TAPE RECORDING has checked the basic method and found it to be quite involved.

Eventually there will be auto and home players on the market with a full complement of facilities, but the record feature will fetch a markedly higher price. For the moment, the lack of record facility in auto units must be regarded as a drawback to those who like to "roll their own." Some of the problems that must be overcome are



Tape Cartridges

indexing, rewind, automatic channel-switching, and a safety timing device. Wow and flutter and overall frequency response will need improvement, too.

Number 4—"Gunked-up" tapes: Some early cartridges in both four and eight-track configurations did have a problem with gunking, but, claim certain tape manufacturers, the problem is well on the way to being solved, namely through the development of better-lubricated tapes. These are now being used throughout the industry and the number of cartridges developing accumulations of oxide that cause dropouts of sound or "seizing" of the tape are infinitely fewer in number, it is claimed. As even better tapes are developed, these problems will be further reduced.

On the other hand, one tape producer (after extolling the virtues of his company's tapes—especially their lubrication qualities) asserted that two key makers had been unable to develop a tape which in his estimation was worthy of use in eight-track systems.

Another tape manufacturer said that despite advances of the art of tape lubrication there would be "occasional difficulties with all types of tape. You're asking an awful lot of a low-cost bit of plastic," he stated. He said further that "The major difficulties with eight-track tapes are pretty well over, especially the seizing." He went on to note that full recording of edge (outer) tracks was not yet overcome. The problem is characterized by dropouts or lower volume of the outer tracks at certain points on the tape. "But . . ." he added, "The average person would not ordinarily hear the minor deviations of this type."

For the moment, users who have run into a gunking problem should return such tapes for a replacement under terms of the warranty issued by responsible manufacturers.

Number 5—Glove compartment storage: It is true that the glove compartment is *not* the place to store tape cartridges. Although some tapes can withstand temperatures as high as 170 degrees fahrenheit, continued exposure is bound to cause disaster, either in the form of warpage or a degradation of the tape itself or its lubrication.

Even though the Lear-Jet Pak 8 type cartridge shells are of a tremendous tensile strength (just try opening one!) the element of extended heat exposure should be heeded, say some experts. (RCA counters this with a claim that it has not had any returns of its stereo eight cartridges because of heat warpage in tests over two years in various hot parts of the country.) The Fidelipac-

type four-track and the Orrtronics eight-track cartridges are not as substantial and greater care is required, caution service people.

In-car storage can be handled nicely via a 10-cartridge carrying case (produced by Amberg File and Index Co., Kankakee, Ill.) now on the market at \$2.95. This could be left somewhere in the car, or stored in the car trunk. (In the latter case, insulated with a blanket or auto robe, or other appropriate insulating material if the trunk is hot.)

RCA provides for its Stereo 8 cartridges a plastic storage housing that offers some insulation against high heat.

Another idea tossed out by a key dealer is to buy a picnic cooler or insulated picnic bag for storage of tapes in the car or car trunk.

Regarding tape storage in general, keep your tapes out of sight of would-be pilferers. Cartridges are still somewhat of a mystery to many folks, and a cartridge lying on the auto seat may be erroneously considered something of value for the light-fingered.

Number 6—Tape players invite theft: the factory-installed tape player is little more of a temptation to Jimmy Vallentines than a factory-installed auto radio. It's a different story with "hang-on" units that are installed as auxiliary equipment. Californians have found them a definite temptation to teen-age hoods, especially if they look easy to remove (and many are).

One tape producer queried by TAPE RECORDING grunted, "You're talking to the right guy; I've had two lifted from my car. But I licked the problem. For a five-spot extra I had a lock installed and *nobody* is getting my third player."

Another way of getting around the problem of theft is to have the add-on player bolted to the floor of the car. This will most often thwart Mr. Lightfinger, especially if he has to work fast.

The main consideration is to discourage would-be thieves. The best way is visible evidence that the auto player is securely anchored and not worth the risk of entry. Where a lock-in installation has been made, make sure it is done so that the locking device is clearly visible to anyone looking into the car.

Industry members believe that as the industry expands and the tape player becomes a mass-market item auto makers will provide removeable panels for all autos produced (as they do today for auto radios) to make theft-proof integrated installations a convenient reality.

ADDENDA: There are other problems to lick in the industry. As one RCA marketing source

There is a startling lack of information about continuous loop cartridges and their players.

noted, "We're not 1,000% satisfied yet, but remember, this is a new and complicated business."

In discussions with producers and merchandisers of continuous loop cartridges and their players TAPE RECORDING learned that tape breakage is more frequent than some of the other problems discussed above. Of the returns analyzed by a major cartridge producer, tapes broken at other than the splice point were among the most frequently mentioned problem. Cartridge jamming was also mentioned frequently. But these are actually machine—not tape—problems, with malfunctioning machines the cause.

The industry has not come up with a totally satisfactory material for pinch-rollers used in the Lear-Jet Stereo Pak 8 systems, one source noted. "What is needed is a material that won't take a 'set' (a slight dent)" the source stated. He added that the problem of pinch-roller indentation was

not "significant", and suggested that users get into the habit of removing the cartridge from the machine to prevent sets that might cause erratic function.

Another point made was that some home players have a high hum level. This is usually generated by the power transformer, the motor, or both, in too close proximity to the tape head, or where the head is not properly shielded. Prospective buyers are urged to check for such hum before buying a home player.

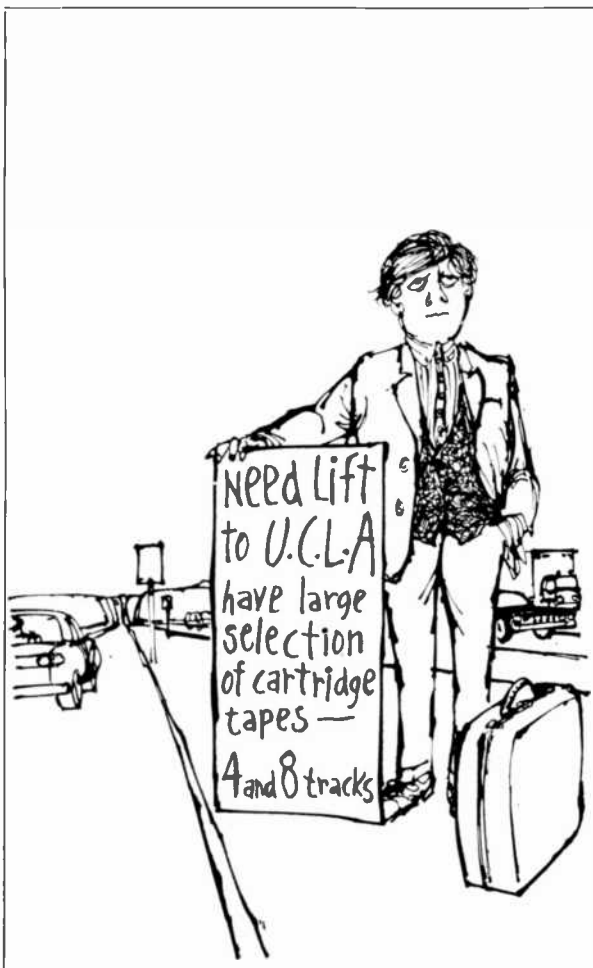
In some auto players there is a trace of wow-and-flutter (erratic movement of the tape which causes imperfect sound reproduction), but no more than exists in many reel-to-reel machines that operate at $3\frac{3}{4}$ i.p.s., the speed at which most auto players run. Some companies which ran into this problem are improving the motors used in their machines, or installing larger motors to handle the additional pull that cartridge tapes require for tape movement. Again, check before you buy.

One engineer pointed out that users may run into apparent malfunction of the switching mechanisms in eight-track players. In many cases it will be a power problem, where the battery voltage is low, perhaps due to a weak cell.

TAPE RECORDING also learned that there is a startling lack of information about continuous loop cartridges and their players. This lack of information is at both the consumer and the servicing level. Many auto firms which market the players do not have sales or service people fully trained in the handling of complaints and problems with the new products. When a person pulls into the garage where he bought his player and is told it will have to be removed from the car for service elsewhere than at the garage, he may wonder if he bought himself a headache—instead of a pleasure device.

In some cases the malfunction could have been taken care of on the spot; but not at this point in the history of the new "art." Until the industry has fully-trained people in the sale and servicing of its cartridge players and removed the mystery from the cartridges, there will be many distortions of the facts, and misunderstandings.

TAPE RECORDING firmly believes in the future of continuous loop cartridges in both four and eight-track configurations, but believes also that patience must be the password for some time to come. Look around at color TV, at the reel-to-reel recorder, or the stereophonic receiver; each is close to perfection, but not perfect. The same applies to continuous loop tape cartridges and their players.



All About Bias

by Robert Angus

To many a tape recorder owner, bias is just a technical term in the literature which accompanies his machine. Yet if some tape professionals have their way, the average man buying a new recorder may soon find a bias control in addition to all the other controls on his machine. Just what is bias, anyway? What's the argument about bias adjustment all about? And how does it affect the recordings you make?

Bias, defined simply, is a sort of sonic primer coat. A reel of blank tape fresh from the box contains millions of microscopic bar magnets pointing every which way. When you put it on your recorder and begin to record, one of the functions of the record head is to apply a bias signal, whose function is to arrange all of the tiny bar magnets in an orderly pattern. Once it has placed all of them parallel with their north poles aimed in the same direction, the record head rearranges them again in a sonic pattern to create the sounds you hear when you play the tape back. Eventually, much of the bias signal evaporates, leaving only the sound recording.

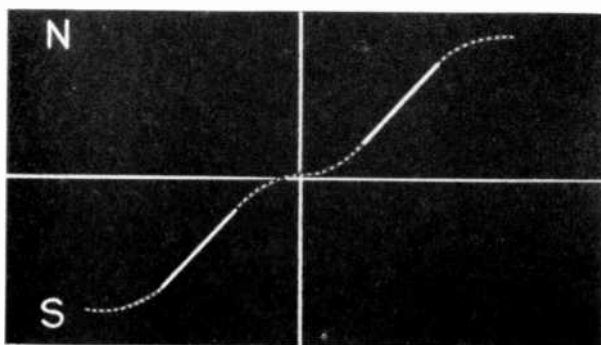


Fig. A

Let's explain "bias" in a little more detail. The line in Figure A represents a typical magnetic tape response curve. Note the red center portion of the curve between the north and south poles where response is distorted. Above a certain level, tape begins to respond in a uniform manner then, as the signal reaches a maximum at either the north or south pole, the oxide becomes saturated and does not respond to stronger signals—we've also indicated these maximum areas in red. Technically speaking, these red areas are non-linear, distorting the sound image as a carnival fun house mirror distorts your reflection.

Without some sort of help, an input signal would be distorted when it passed through the non-linear red portion of the tape curve and would emerge as the very distorted signal shown on the right. Researchers discovered that when the input signal is superimposed on a constant

bias signal, the bias signal pushes the input onto the best portions of the tape response curve. Not having any interference from the central portion of the curve, the recorded signal parallels the wave pattern of the input, but on the desirable portions of the tape response curve. The bias signal added to the input in your recorder is usually about 75,000 cycles per second—well above the range of our hearing. When the input is added to the bias, the recording which results is as undistorted a sound image as your own visual image in a good mirror. Normally, bias setting on tape recorders are extremely critical due to the limited "blue" linear portions of the tape response curve. At the moment, each manufacturer sets his own bias adjustment on the machines he sells for amateur use, then seals them so that subsequent adjustment will only be done by a qualified serviceman. The exact level of the bias frequency he chooses is left to him, and it's a factor most home users don't consider before buying their machine. The rule of thumb for most engineers is to set bias at five times the

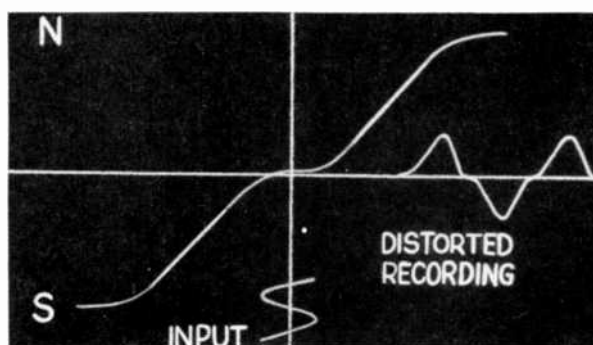


Fig. B

top audio frequency a machine will record—i.e. a recorder capable of taping 20,000 cps will have a bias of 100,000 cps.

By the same token, each raw tape manufacturer has engineered his tape to operate best at a specific bias. Because two major manufacturers may select different biases for their tapes, the recordings resulting from the same machine have slightly different sound qualities. The new tape formulations—low noise, slow speed and high output—have different biases than the manufacturer's ordinary formulations in most cases, and for best results, with them professional users must re-adjust the bias of their machines. As a result, these days, many studios are settling on a specific tape—Audio Devices 1251 high output, Scotch 201 low noise or Reeves Soundcraft S-12, for example—and refusing a record on anything else to avoid the need for calibration and recalibration of the

When the input is added to the bias, the recording which results is as undistorted a sound image as your own visual image in a good mirror.

equipment. Some of these studio engineers, however, are among the most vocal in urging home recorder manufacturers to facilitate bias adjustment on their machines so that the amateur can switch back and forth from one tape type to another, getting the maximum from each.

The bias level must be set high enough to permit faithful recording of the full audio range. Overbiasing brings almost as many problems as underbiasing. The latter produces distortion, noise and low sensitivity, while the former, less audibly disturbing, results in poor frequency response and low sensitivity throughout the frequency range. The low frequency noise also increases as the bias is increased.

It is for this reason, because the effects of over-bias are not as directly objectionable as those of under-bias, and because of the high degree of variability in tape performance that most home recording equipment is built with a bias current greater than the optimum. This is an acknowledged compromise and a conservative protection against the severe distortions and erratic response of under-bias.

Adjusting bias today isn't an impossible task for the home user. To do it, he needs only a screwdriver, a spare recorder, a test tape and a near-perfect ear. A desirable substitute for the latter is a VTVM, or vacuum tube voltmeter. To make the adjustment, the first step is to locate the bias trim screws. Your recorder's service manual should identify them for you. There is one screw for each channel. If your recorder is a three-head unit, you'll have an easier time than if it has a combined record-playback head. For either type, the procedure is much the same—you play an alignment tape on the spare machine and copy it on the recorder you're adjusting. If yours is a three-head machine, monitor the copy from the tape as it's being recorded—by VTVM, if you have one, or by ear. You simply turn the bias-adjustment screw very carefully until you get maximum volume or a peak meter reading.

The procedure is the same with a two-head machine, except that you must play back the copy to estimate its level, make very careful adjustments by guess, rerecord and then try to determine by playing the new copy whether it was louder or softer than it was before. This sequence must be repeated until your ears and memory tell you which position produced the loudest recording. With a VTVM, on the other hand, you can indicate with a grease pencil where the needle peaks on each playback, thus arriving at an accurate setting. To solve some of these problems,

Armour Research Foundation several years ago developed the Crossfield head, a device which removed the bias function from the regular record head. The main idea was to increase high frequency response by separating the two functions—with the result on some machines of 40,000 cps at 7½ ips or 20,000 cps at 3¾ ips.

Biasing in magnetic recording is almost as old as magnetic recording itself. It was in 1907 that Valdemar Poulsen, the father of the tape recorder, discovered that by adding a precise amount of direct current bias to his recordings on wire, he could achieve greater fidelity. For the next 14 years, nothing much happened with magnetic recording. Then, in 1921, two engineers working at the U.S. Naval Research Laboratory discovered that by substituting AC bias for Poulsen's DC, they could reduce background noise sharply. This discovery attracted even less attention than Poulsen's original recorder, the telegraphone, had—until World War II, virtually all magnetic recording in the United States and in Europe was done with DC bias. In 1939, American Telephone & Telegraph Company featured an AC-biased tape recorder at the New York World's Fair. The machine was displayed as a novelty which let Fair visitors hear their own voices as they would sound to a listener at the other end of a telephone line.

At Armour Research Foundation, Marvin Camras built on these developments and created an AC-biased wire recorder which was used extensively by the Armed Forces during World War II. It was the Germans, however, who coupled AC bias and plastic-based recording tape to come up with a recorder good enough to fool Allied experts into believing that Hitler was in this or that broadcasting studio, hundreds of miles from his actual whereabouts. The Germany Magnetophons, in fact, were used extensively in Nazi-occupied radio stations like Radio Luxembourg, Radio Paris and Radio Frankfurt for propaganda purposes such as speeches by Der Fuhrer. These speeches sounded so real and lifelike—free from the surface noise of commercial transcriptions and limited range of magnetic recording—that Allied intelligence officers used them to pinpoint Hitler's whereabouts.

It was the discovery of the German Magnetophons with their AC bias which launched the American tape recorder industry at the end of World War II. Today, nobody uses DC bias for serious sound recording. AC bias, however, is emerging from the engineer's lair and fast becoming a subject of concern for every non-technical serious tape hobbyist.

The Sounds of the Circus

by Richard Ekstrait



Six year old Michael interviews Little Louie the midget clown in the sideshow.

This vendor is also a midget.



You'll thrill to the spectacular costumes, the dizzying gyrations of the acrobats and the amazing feats of the animals and their trainers.

Anyone who says the circus is only for children certainly hasn't visited a Ringling Brothers, Barnum and Bailey extravaganza in many, many years. Since the days of Queen Victoria when P. T. Barnum referred to it as "The Greatest Show on Earth," the circus has thrilled millions. And the circus of today is probably as good as it has ever been. It's alive with excitement and sounds you'll seldom hear elsewhere. In addition to offering wonderful sounds for your collection of recordings, you'll thrill to the spectacular costumes, the dizzying gyrations of the acrobats and the amazing feats of the animals and their trainers.

As soon as the posters went up in our area advertising the arrival of the "Greatest Show on Earth" my three children began promoting me to take them to the circus. My daughter suggested that we tape the sounds so she could play them back for her friends.

Once we determined we were going to tape our visit to the circus, we decided to attend a morning performance which would be relatively uncrowded and allow us an opportunity to spend more time with sideshow characters and possibly the circus performers themselves. Since we weren't seeking technical perfection in our recording, but rather a record of our experiences, we decided the compact Norelco Carry-Corder would be the easiest and simplest battery recorder for the children to use.

Entering Madison Square Garden we proceeded downstairs to the sideshow and menagerie. Hawkers at stands were offering circus lights for children to wave when the ceiling lights are turned down. We recorded a few hawkers and then proceeded to the menagerie where the elephants, zebras, gorillas, tigers, and other fierce-looking animals were caged. You have to be patient when recording animals as they seldom perform on cue. The Carry-Corder is equipped with a remote control switch on the microphone and this enabled us to record almost immediately when a lion roared or an elephant trumpeted. We bought a bag of peanuts and fed them to the elephants, recording as we could with an explanation of what was happening.

For our entire circus recording we featured narrative bridges to explain each item we were recording. This helps avoid embarrassment later when a particular sound may be totally unfamiliar on playback—even though you knew exactly what you were doing when you recorded it.

The children were anxious to begin taping interviews with circus personalities, so we started by visiting the sideshow performers. Our first interview was between six-year-old Mike and



They supplied the thrills, we narrated.

Sounds of the Circus . . .

Little Louie, the midget-sized clown. Mike asked him how tall he was (28 inches), how old he was, and the half-dozen or more questions you'd expect a child his age to ask. Little Louie couldn't have been more cooperative or nice.

Our next interview was with the Tattooed Man. "Where did you get all those tattoos?" asked 10 year old Janet. The two of them began an animated discussion on the history of tattoos which turned out to be very interesting. Seven-year-old Steven selected the Fat Man for his first interview. "Would you like to see my daily menu?" asked the fattest man we had ever seen. He was most anxious to discuss food and by the time Steven and he had finished, we all felt a bit hungry.

"Heeya, get yer cotton candy," shouted an attendant at the cotton candy stand. He was a midget with a huge, booming voice. We decided to tape him, too. Next to the stand was a mean-looking knife-thrower with a lovely young assistant. We couldn't resist taping those thuds as the knives surrounded her, inches from her skin. We also managed to record a few gasps from members of the audience each time the knives came very close. However, this is the type of recording session we might have been confused about on subsequent playback if we hadn't explained what it was beforehand.

A lady sword swallower was next on our agenda followed by twin midgets, one of whom had a huge snake hung around his neck. Mike took the



Coco the clown reversed the procedure and began interviewing 10 year old Janet.

The highlight of our day at the circus came during intermission when we went backstage where the circus performers change and wait to go into the rings.



Steven walked over to where the band was warming up and recorded several of their selections before the acts began.

microphone and asked them how they handled that vicious-looking snake.

The public address system announced the start of the circus and we proceeded upstairs to our seats. There were those hawkers again—peddling soft drinks, hot dogs, circus lights and various hats and novelties. The band began to tune up and Steven suggested that he be allowed to walk over to the fence by the band to get some close up recordings of the music.

Soon the ringmaster was in the center ring in one of his many glittering costumes announcing the events to follow. It was easy to tape him because there are plenty of loudspeakers all over the circus. Nowadays the ringmaster sings and we were able to record several of his selections. Needless to say, his songs were somewhat muffled by the various background noises.



Backstage, the clowns adjust their makeup before resuming their performance.

When you record the high wire acts and many of the amusing side attractions such as the hijinks of the clowns and the performing dogs and monkeys you need to supply your own narrative. But that's fun, too. Being a circus commenorator explaining the various goings on requires only a slight flare for the dramatic. Your comments, punctuated by the cheers and gasps of the audience are a worthwhile addition to any circus tapes you make.

The highlight of our day at the circus came during intermission. We strode into the backstage area where the circus performers change costumes and wait to go into the rings. Standing off to one side was Coco the Clown, who is not only the top clown in the Ringling Brothers circus, but a true comedic star. We walked over to him and asked if we might tape an interview with him. He thought that was a great idea. Janet was selected to do the interview and she started out well but ran out of questions too soon. Coco did a turnabout and proceeded to interview Janet. Soon they were trading questions to each other back and forth and the interview would have gone on indefinitely if not for the signal that intermission was over.

As the accompanying photographs should indicate, you can tape anything at the circus that we did. My children have replayed our circus tape for relatives and friends perhaps, a dozen times already, and each time they find something else that delights them and reminds them of the good time they had that day. And you know something? Of the thousands of children that were at the circus that day, I'll bet mine were the only ones to bring back such a memento.

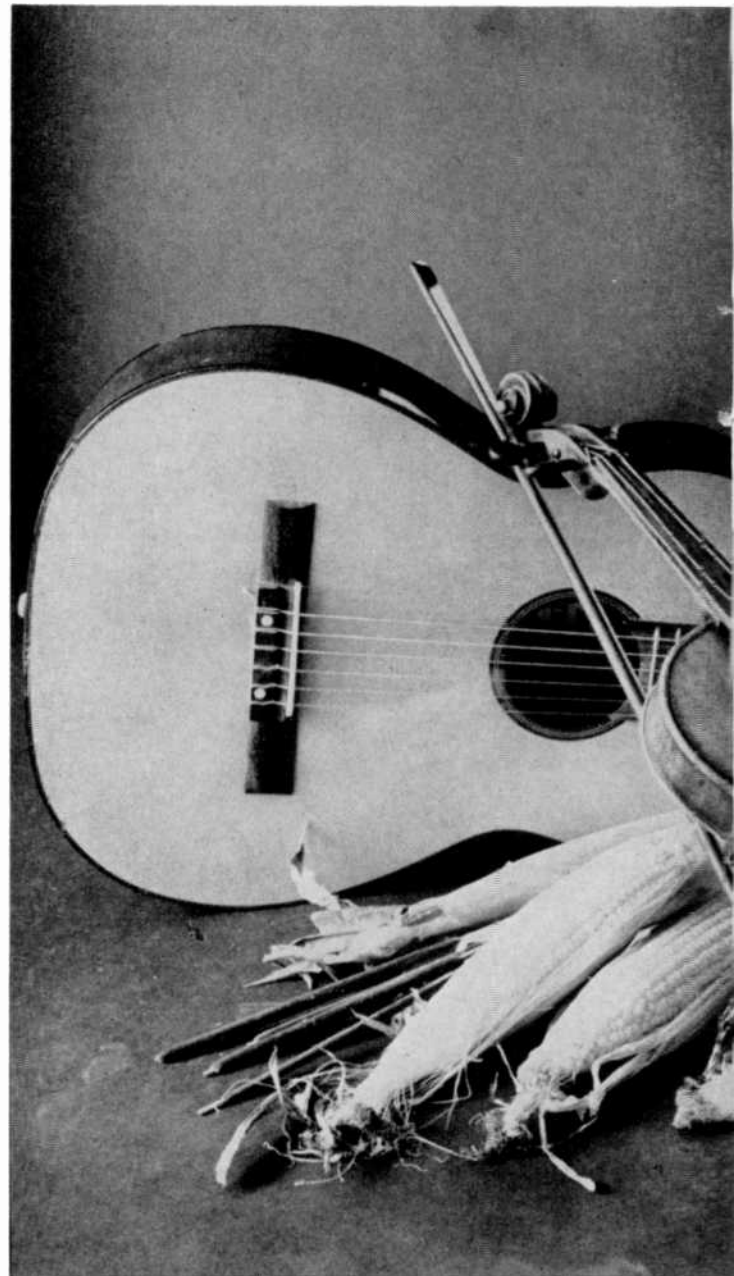
The Basic Tape Library Country Music

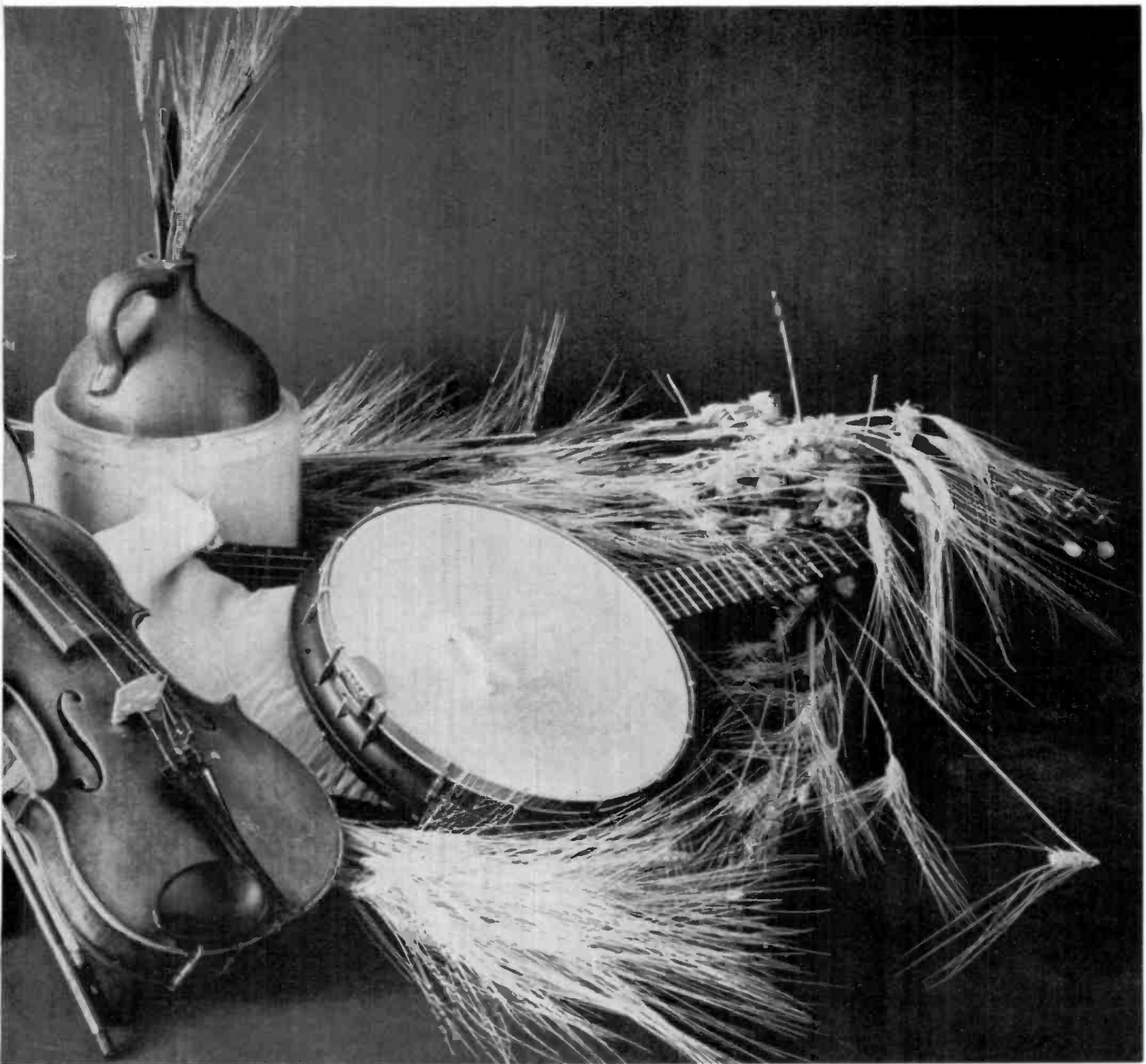
by Bob Swarthmore

*...somewhere a station manager
or singer hit on the idea of
presenting a program of
hillbilly favorites performed
by a local favorite.*

Nobody knows just when country music got started. But students of the subject have a pretty good idea how. Many of the farmers, coal miners and laborers who inhabited the hills and valleys of rural Appalachia before World War II could trace their ancestry back directly to farms in Scotland or England. When the original colonists came to the New World, they brought with them a wealth of folklore, including songs about unrequited love, political murder, highwaymen and sudden death. In many of the small communities of Kentucky and Tennessee, the songs remained so pure that when English folklorist Cecil Sharp visited America in the 1890's, he found the traditional songs more faithfully preserved here than in their native Britain.

For the most part, the songs were sung by a member of the family to the accompaniment of a dulcimer, banjo or guitar. As the 19th century passed into the 20th and movies and records began





providing entertainment for the city folks, the "hillbilly entertainer" began to emerge. At the beginning, his sons relied heavily on the traditional ones, but he'd "change 'em around," so that music which once accompanied the tale of the slaying of a Scottish earl now told the story of a local desperado. A Scottish maiden's despair at the loss of her true love at sea now told of the heartbreak of a Kentucky miner's wife following a cave-in. The singer, who began by accompanying himself, soon added a two-piece band—which might include fiddle, steel guitar and bass or drums.

These strolling minstrels played church suppers, Saturday night hoedowns, barn dances, virtually any social gathering in the community. For the most part, they weren't known outside the county, and even if they were, roads were so bad and cars so expensive that they couldn't afford to take engagements very far from home.

By the early 1920's, the Appalachians had been discovered by American folklorists as a rich source of Americana. One of the first jobs the folklorists had was to separate the true folk song from hillbilly music—not always an easy task today. As a rule of thumb, they decided that if you could trace the origin of a song back to a specific individual, it was a hillbilly song. If you couldn't, it was true folk music. Then they began to include the songs composed by John Jacob Niles and Woody Guthrie as folk songs. The accompaniment often was a tipoff, too. If a performer used an approved instrument like a guitar or zither, he was a folk singer. If his accompaniment used steel guitar or fiddle, it was hillbilly music.

Hillbilly music would have stayed in the hills if it hadn't been for radio, which appeared in the market towns of the Tennessee Valley in the early 1920s. The stations were small, but

Country Music

they sprang up wherever there were enough local merchants to support them. At the time, facilities for playing records on the air hadn't been developed (nor had network programming). As a result, there was a demand for live entertainment which would be inexpensive.

Nobody knows just who first hit upon the idea, but somewhere a station manager or singer hit on the idea of presenting a program of hillbilly favorites performed by a local favorite. He wasn't paid for his time—but he was allowed to promote his local appearances and encourage listeners to attend. As singers were heard by larger and larger audiences, demands for personal appearances came from all over the area covered by the station. Soon the pattern was repeated all over the Southland.

Hillbilly music may have been the rage in Bristol, Tenn. or Dalton, Ga., but it was anathema to the record companies in New York, and even to the department and music stores which sold Caruso and Paul Whiteman recordings in Atlanta or Memphis or Louisville. The late Eli Oberstein, one of the first men to record country music (for RCA Victor), recalled an early expedition through the South, trying to interest stores in carrying country music. "We don't want those records because we don't want those people in the store," one major department store buyer told him. "They don't pay their bills, and our regular customers would resent it."

Oberstein and other record executives like Columbia's country expert, the late Frank Walker, Steve Sholes, another Victor executive, and others pointed out to their superiors that while country



Roger Miller enjoys a moment in concert.

During the past 20 years, Nashville has become the third largest recording center in the United States . . .



Country music on the old "Grand Ole Opry" radio show broadcast from Nashville's WSM.

music was gaining in popularity, record sales were declining (largely because of the impact of radio). When the major companies finally decided to take a chance, in the mid 1920s, they sent recording teams down South with portable recording equipment. "We'd set up show in a parlor suite in a small town hotel—the suites travelling salesmen used to show their new dresses or hardware to local dealers," recalls Steve Sholes, head of RCA Victor's current country and western music program. "We'd put the recording equipment in the bedroom and record as many as half a dozen local singers in the parlor. Because the rooms weren't soundproofed, we'd record car honks, trolley bells and any other street noise. Nobody minded." Sholes recorded local celebrities—"remember, the stations weren't very powerful, and a star in Tennessee was a nobody in Georgia"—in such towns as Atlanta, Bristol, Oklahoma City, Memphis and Dallas.

Oberstein solved the sales problem by selling hillbilly and race (i.e. rhythm and blues) records to five and ten cent stores, general stores, dry goods stores, in fact to just about every kind of store except record stores. "They weren't ashamed of their hillbilly clientele, and they sure could sell records," he once said.

In 1925, country music took its first step toward reaching a national audience. In that year, the manager of WSM, in Nashville, Tenn., one of the most powerful stations in the South, followed the lead of the smaller stations. He created a program called "The Grand Ole Opry," which featured singers and fiddlers from all over the Southland. For the younger singers, it meant something akin to national exposure (they received true national exposure when WSM joined the fledgling National Broadcasting Company and fed the program to the nation every week for more than

30 years). For some of the older performers, it meant a chance to settle down in Nashville, where they could count on regular work from WSM.

Country music's next big break came with the outbreak of World War II. As young men from the hills were drafted, they took their music to war with them. Soon, Armed Forces Radio stations in England were beaming Elton Britt and Hank Snow not only to servicemen from the South, but also to those from the Midwest, the Far West and New England—and even Britons themselves. As the armies carried the war through Western Europe into Germany, hillbilly music followed the troops. The same thing happened in the Pacific with the result that Roy Drusky, Jerry Lee Lewis, Roger Miller and others are as big names in Hamburg or Copenhagen or London or Tokyo as they are in Nashville.

On the home front, defense industries in Chicago and Los Angeles began luring unemployed workers out of the hills. As they made bombs or worked on tanks on the night shift, they requested local radio stations to play their favorites. Before long, stations in Detroit, Cleveland, Chicago and along the West Coast were allotting huge chunks of their program schedules to country music.

During the past 20 years, Nashville has become the third largest recording center in the United States, accounting for 18 per cent of all popular recordings made in the U.S. last year. The city has a floating pool of musicians who work for WSM and for the 20 or more record companies with offices and studios in the city. Joseph Abend, an executive with Hilltop Records, notes that a fiddler may appear today as a soloist on an album for his company, tomorrow as an orchestra leader for a second recording, and later on as a member of the orchestra for a third album. "It's fantastic to watch them work," Abend states. "They need no rehearsal. They just sit down, you tell them the kind of sound you want and they give it to you."

The sound they give has come to be known in the trade as the Nashville Sound. "It has nothing to do with high fidelity or stereo," Abend continues. "It's the result of a group of musicians, all of whom have played with each other before and worked with the recording engineer sitting down in the relaxed atmosphere that prevails down there to do a session." Abend notes that his attempts to move the same musicians and engineers to New York and do a session have always proved unsuccessful.

In the mid 1950s, a number of singers followed the lead of Elvis Presley and dipped into the country music repertoire for songs and stories



Hank Snow, a pioneer, and great composer.

RCA

over which a beat could be superimposed. The relationship between the two has remained almost as close as the folk music, but the true aficionado is much less interested in the beat than he is in the story and the tune. "The story must be interesting and relevant to him and he must be able to hear it," says RCA's Sholes. "If it doesn't ring true, the song will die."

The thematic material of country music has come a long way from the Elizabethan ballads of the 1890s—although it isn't uncommon even today for a song out of the folk music collections of Cecil Sharp or Francis James Child to turn up in an album of country music. The first cases of

Country Music



Chet Atkins records the unique Nashville Sound he has made famous.

"changing 'em around" involved the use of traditional tunes to tell stories of local landslides or floods, the story of a jilted daughter or young man who dies of love, even local rustic humor. As performers began to compose in the country idiom during the 1920s, there was a rash of songs about railroad disasters (railroading was a familiar pastime to most country folk, who either worked on the railroads themselves or relied on the railroads to carry their coal or produce to market). In 1927, the first great country composer, Hank Snow, appeared on the scene with his songs about railroading (and other standard themes like love and the faithful old hunting dog). As the railroad gave way to the truck and the automobile in the early 1950s, country music began substituting trucking ballads and auto crashes for the songs about trains. Some of the new hits tell about air crashes and disasters (a fact

which reflects the deaths of a number of country artists in plane crashes).

Work songs have always been a part of the country music scene. One country work song—Merle Travis' *Sixteen Tons*—even made the hit parade. Work songs continue to tell of the discomfort and poverty in the mines and mills of the south—but the songs have never taken on the protest character of folk songs on the same subjects. As country life has gotten more sophisticated, so have the lyrics and the scores of the songs. The three-piece country ensemble of the early days is long since gone. Five players are considered a bare minimum and some albums have used as many as 60 musicians.

Today, country music is heard and loved not only in sleepy southern villages, but in Minneapolis, Portland, Ore., Providence, R.I., Los Angeles, Chicago, Pittsburgh—in fact just about everywhere in America but New York City, Philadelphia, Boston and northern New England. And who knows when they're likely to join the crowd?

Here are 20 tapes or cartridges of country music which should form the cornerstone of any tape library.

Basic Library

- | | |
|--|---|
| Arnold, Eddy—Folk Song Book | RCA Victor FTP 1244
(7½ ips); P8S-1001 (8-track cart.) |
| Atkins, Chet—Our Man in Nashville | RCA Victor
FTP 1169 (7½ ips) |
| Cash, Johnny—Ring of Fire | Columbia C2Q 703 (7½ ips) |
| Cline Patsy—A Legend | Everest 26-129 (Fidelipac cart.) |
| Copas, Cowboy— | Starday MST 144 (7½ ips) |
| Drusky, Roy—Pick of the Country | Mercury 60973
(7½ ips) |
| Homer & Jethro at the Country Club | RCA Victor
P8S 1068 (8-tr. cart.) |
| Jackson, Tommy—Greatest Bluegrass Hits | Dot 28-101
(Fidelipac cart.) |
| Lewis, Jerry Lee—Greatest Live Show on Earth | Smash 67056 (7½ ips) |
| Miller, Roger—The One and Only | Camden c8S 5018
(8 tr. cart.) |
| Miller, Roger—Dang Me | Smash 67049 (7½ ips) |
| Pierce, Webb—Four-Star Country Favorites | Everest 26-115 (Fidelipac cart.) |
| Reeves, Jim—The Jim Reeves Way | RCA Victor
P8S 1058 (8 tr. cart.) |
| Snow, Hank—Souvenirs | RCA Victor P8S 5028 (8 tr. cart.) |
| Snow, Hank—Favorite Country Hits | RCA Victor
P8S 1041 (8 tr. cart.) |
| Tillotson, Johnny—Talk Back Trembling Lips | MGM 4188 (7½ ips) |
| Wheeler, Billy Edd—Ode to the Little Brown Shack | Kapp 41093 (7½ ips) |
| Williams, Hank Jr. and Sr.—Father & Son | MGM 4276 (7½ ips) |
| Bluegrass at Carnegie Hall | Starday MST 174 (7½ ips) |
| Country Music Hall of Fame | Starday MST 164 (7½ ips) |
| 12 Great Country & Western Stars Sing | Mercury 60825 (7½ ips) |

tape

REVIEWS

Puccini

Turandot—Birgit Nilsson, Renata Scotto, Franco Corelli, soloists, Orch. & chorus of the Rome Opera House cond. Molinari-Pradelli. Angel 3¾ ips Y3S 3671, \$17.95.

Music Performance Recording



Turandot comes off very well indeed on tape. For several years, RCA Victor has offered a truly outstanding recording with Mme. Nilsson in the title role, Renata Tebaldi as the slave girl Liu, Jussi Bjoerling as Prince Calaf and Giorgio Tozzi as King Timur with the same orchestra and chorus conducted by Erich Leinsdorf. The Victor version, however, is recorded at 7½ ips and costs \$21.95.

First, there's the matter of the cast. Mme. Nilsson sings powerfully on both tapes, but the Angel does her perhaps slightly more justice. Personally, we prefer the Victor soloists in the other roles, with Mme. Tebaldi turning in a stellar performance in the relatively small role of Liu. Jussi Bjoerling was one of the truly golden voices of our time, and this recording was one of his best. This is not to negate the fine job Corelli does for Angel; his partisans will find this tape a fitting addition to their collections. Next there's the conductor and the chorus. Leinsdorf's tempos seem to us to be more incisive, more driving; and his chorus and orchestra are recorded more brilliantly. Molinari-Pradelli, on the other hand, seems to take a slower, more reflective approach to the music. Angel has kept its soloists up front, with orchestra and chorus subdued throughout most of the opera while Victor tends to merge all elements into the drama.

That leaves two other factors to consider—price and fidelity. There is less brilliance on Angel than on the RCA tapes. Whether this is because of the slower tape speed, or because of the recording philosophies of the two companies, we can't tell, although we do note some tape hiss on our Angel review copy. On the other hand, Angel has two fewer interruptions than RCA. The disc price for either recording, incidentally, is within a few pennies of the Angel tape price. Both tapes run very nearly two hours in length.

If you prefer the Angel cast, we don't think the slight difference in recording quality should deter you from buying it. If you want Tebaldi and Bjoerling, then try to scrape up the few dollars difference. If your interest is primarily in sound, then don't take less than the Victor. But if you're operating on a budget, you can buy the Angel secure in the knowledge that you're getting a first-rate performance with sound comparable to most recorded opera today. If you like opera at all, you should have one or the other in your tape library. —R.A.



Birgit Nilsson

Callas

Highlights from Puccini's *Tosca*, Bizet's *Carmen* with Carlo Bergonzi, Tito Gobbi, Nicolai Gedda, Orchestra du Theatre National de l'Opera of Paris cond. Pretre Angel 3¾ ips Y2S 3677, \$11.98.

Music Performance Recording



When we reviewed the complete operas last year, we found Mme. Callas compelling in both roles, although some of her vocalizing—particularly as *Tosca*—left something to be desired. While Callas holds the center of the stage through sheer dramatic ability, it is her supporting cast which provides the musicianship on this tape. Tito Gobbi as the evil Scarpia turns in one of the best singing performances on tape while Nicolai Gedda is a passionate Don Jose.

What we have here are nearly an hour's worth of highlights from *Tosca*, including all of the best-known arias and scenes—a good deal better than half the opera, in fact. From *Carmen* we have 47 minutes of standard arias and choruses, about one-third of the whole opera. While care has been taken in the *Tosca* side to provide a musical and dramatic flow which gives the listener the impression of hearing a condensation of the opera rather than isolated excerpts, the Bizet side takes the opposite approach.

The recording at 3¾ ips is about the same quality for *Tosca* as on the original tape, while *Carmen*, issued originally at 7½ ips, has lost some of her highs. On most recorders—in fact on virtually any recorders in which component speakers are not used—there is likely to be no difference in sound quality between the two *Carmens*. But if you want to hear *Carmen*—and Callas—at her best, we'd suggest you listen to the complete tape before buying this one. —R.A.

Kodaly

Harry Janos Suite, Variations on a Hungarian Folk Song. Boston Symphony

Orch. cond. Leinsdorf RCA Victor 7½ ips FTC 2216, \$7.95.

Music Performance Recording



Erich Leinsdorf just possibly could be the greatest conductor in the world today. Here, he's given two exciting readings of modern classics and has received all the technical cooperation one could expect from RCA's engineers. Hary Janos is a sort of Hungarian Major Hoople, who loves to regale anybody who will listen with his stories about his younger days as a hussar. It seems that Marie Louise, Napoleon's wife, was making a tour of the villages one day when she spied a handsome young man in the crowd. One look and she was hopelessly in love. She urged Hary to accompany her back to Vienna, where he quickly becomes a favorite at court. Napoleon, hearing of the goings-on in Vienna, sends an army to put a stop to them. But Hary Janos defeats the army and returns to Vienna in triumph. Then, longing for the simple village life, he turns his back on his newfound glories and returns to his village sweetheart.

The tale is told with tenderness, wit, and just a drop of acid here and there. Leinsdorf's performance of it clearly is the best on tape, and the sound makes this a demonstration tape to be reckoned with for some time to come. —R.A.

Gilbert & Sullivan

Princess Ida—Soloists, D'Oyly Carte Opera Company Chorus, Royal Philharmonic Orch. cond. Sargent. London 7½ ips LOK 90114, \$9.95.

Music Performance Recording



We've been accused, from time to time, of looking back too fondly on the D'Oyly Carte Opera recordings of Gilbert & Sullivan made during the 1950s. To freshen our recollection, we dug the monaural discs of "Princess Ida" off the shelf and gave a listen after hearing this tape. With two exceptions, our vote goes for the tape—not only for vastly superior recording and generally firmer conducting and orchestral playing, but also for vocalism and comic interpretation.

The two exceptions, however, are important ones. John Reed's King Gama can't hold a candle to Peter Pratt's superb monaural recording; and Philip Potter hasn't the remarkable tenor voice of Leonard Osborn as Prince Hilarion. In several cases, there are repeats by artists of their earlier performances, and in each instance, the 1966 performance is better (as well as being better recorded).

The joke in "Princess Ida" is women's suffrage and rights—something which ceased to be a joke many years ago. For that reason, the operetta has fallen behind some of the more popular Gilbert and Sullivan works. Nevertheless, there is plenty of comedy left, particularly in

TAPE REVIEWS

the misanthrope King Gama, his witless sons and stubborn (but just a mite cowardly) daughter and the ambitious Lady Blanche. There's also lots of first-rate music—somewhat better performed than on recent D'Oyly Carte tapes.

If you're a dyed-in-the-wool Savoyard, you must have this tape. If all the G & S you know is "Tit Willow" and "Hail, Hail the Gang's All Here," try this tape for a pleasant surprise. —R.A.

Tchaikovsky

Tchaikovsky Piano Concertos Nos. 2 and 3, Gary Graffman, piano, Eugene Ormandy conducting the Philadelphia Orchestra. Columbia MQ795, \$7.95.

Music	◆◆◆◆
Performance	◆◆◆◆
Recording	◆◆◆◆

Graffman gives a big, bravura performance compatible with the music and with Ormandy's conducting. The long first movement of the Second Concerto, very exciting, contrasts sharply with the short, quiet second movement, where Graffman displays his ability to interpret the poetic. The fast moving third movement, very reminiscent of the Saint Saens piano concert, is a challenge to the agility of the pianist. Graffman does a superb job.

The single-movement Third Concerto is largely an exercise in bombast, and requires concentrated listening to uncover its nice moments. Hi-finks will find some percussive passages a lot of fun, and great for showing off their "rigs." The performers in this case are superior to the musical fare. —F.P.



Chamber Music

Music From Marlboro, Alexander Schneider conducting the Marlboro Festival Orchestra, Bach, Concerto in D Minor for Three Pianos, BMW 1063, Bach Concerto in C Major for Three Pianos, BMW 1064, Mozart Concerto in E Flat for Two

Pianos, K 365, Columbia MQ 798, \$7.95.

Music	◆◆◆◆
Performance	◆◆◆◆
Recording	◆◆◆◆

This recording is part of a series Columbia has been making at the summer chamber music workshop which Rudolph Serkin founded in Marlboro, Vermont.

The two Bach works, which were originally written for the harpsichord are here performed on the piano. And that is the problem.

It requires a very special kind of musician to successfully translate the works which Bach originally created for the harpsichord to the piano. The very nature of the instrument makes harpsichord music highly idiomatic and its performance requires an enormously accurate and delicate touch. Unlike the piano, the baroque harpsichord did not have a sustaining pedal to bridge over the notes and as a consequence, precise phrasing is an absolute necessity if one is to avoid pianistic catastrophe.

Certainly, it would be an overstatement to say that Serkin and his associates are undone by the music, but to my mind, they are something less than successful.

As for the Mozart Two Piano Concerto, Mr. Serkin and his son Peter make an admirable team and except for a moment or two of indecision (presumably on the young Serkin's part) the performance is a delight. —F.P.

Choral Music

Chichester Psalms, Facsimile (Bernstein). Camerata Singers directed by Abraham Kaplan, New York Philharmonic conducted by Leonard Bernstein. Columbia MQ 789, \$7.95.

Music	◆◆◆◆
Performance	◆◆◆◆
Recording	◆◆◆◆

Chichester Psalms is a somewhat esoteric bit of modern choral music (sung in Hebrew) which, on first hearing, may not reveal its plus qualities. Repeated listenings uncover subtle beauties and a coherence that adds up to a major new offering. This is the first recording of the work completed in May, 1965.

Facsimile, a "choreographic essay" for orchestra, is also in the modern vein. Here, too, repeated listening pays off. Many fine moments reward the patient listener. —F.P.

Saint-Saens

Piano Concertos #2 and 4, (Saint-Saens). Philippe Entremont, piano, with Philadelphia Orchestra conducted by Eugene Ormandy. Col. MQ 788, \$7.95.

Music	◆◆◆◆
Performance	◆◆◆◆
Recording	◆◆◆◆

Every once in a while comes a recording that makes your hair stand out end,

or raises goose pimples. If you're remotely sensitive to great music magnificently performed, you'll respond in like. Entremont extracts every nuance from the piano score; Ormandy supports him supremely with the Philadelphia Orchestra in top form. And the sound engineers have come through with a recording that matches the performance. A winner! —F.P.

Mahler

Mahler: Symphony No. 4 in G, George Szell and the Cleveland Orchestra, Judith Raskin, Soprano, Columbia, MQ783, \$7.95.

Music	◆◆◆◆
Performance	◆◆◆◆
Recording	◆◆◆◆

It has always seemed to me that Mahler provides a natural bridge between 19th century romanticism and the music of the 20th century.

The Fourth symphony is a particularly lyrical and melodious score with just enough "clang" to establish it as a forerunner of the modern.

Perhaps, because the music is essentially romantic, Szell's meticulous and classic approach makes this performance all the more poignant. Certainly, Judith Raskin's dulcet soprano is no mean contribution to the overall excellence. And the recording itself is simply lovely.

Among the more recondite, Szell has long been known as "Gorgeous George", not of course for his personal life, but rather for the invariably beautiful sound he is able to command from his musicians. If there is any other Mahler Fourth that even comes close to this one, I haven't heard it. —B.N.

Bartok

Bartok: Concerto for Orchestra, Janacek: Sinfonietta, Cleveland Orchestra, George Szell, Cond., Columbia MQ776, 7½ ips., \$7.95.

Music	◆◆◆◆
Performance	◆◆◆◆
Recording	◆◆◆◆

As far as I know, the first recorded performance of the Bartok work was by Fritz Reiner and the Pittsburgh Symphony. When I first heard it, about fifteen years ago, I was absolutely enthralled. Since then it has been recorded many times and is probably the most well known Bartok composition. But hearing this new Szell version is like hearing it for the first time all over again. With its glittering sonics and meticulous performance the concerto is an absolute revelation. When you add the lovely Janacek Sinfonietta, this tape is almost irresistible. I strongly recommend it. —B.N.

Tape Recording

Grofé, Gershwin

Grand Canyon Suite, Rhapsody in Blue, An American in Paris. *New York Philharmonic and Columbia Symphony Orchestras. Leonard Bernstein, piano and conductor. Columbia, H2M8, \$9.95.*

Music Performance Recording

A double-length tape, this one is devoted to home-grown American music. There's no denying that there are strong ties between Ferde Grofé and George Gershwin, especially since Grofé orchestrated the original version of Rhapsody in Blue. But there is little similarity between the two composers, and one can't help but wonder at this pairing. Bernstein's reading of the Grofé is brilliant and almost too perfect. This work seems to gain more color as the years go by and new generations of conductors try their hand at it. Bernstein's performance certainly ranks with the best. The Gershwin Rhapsody underscores Bernstein's many talents. It is always a source of wonderment when someone conducts from the piano—even more so when the result is so superlative. An American in Paris gets a lively and boisterous performance, as well it should. There is little that is refreshingly new in this recording except for good solid performance, and the occasional rustle of musicians turning their pages of music—a touch of spontaneity that makes this tape even more gratifying. There seems to be little frequency loss from the slow (3¼ ips) tape speed, nor is there any noticeable deterioration in signal-to-noise ratio. An excellent job.

—W.G.S.

Gershwin

Rhapsody in Blue, Embraceable You, They Can't Take That Away From Me, I Got Rhythm, The Man I Love, Bidin' My Time, Love Is Here to Stay. *Peter Nero, piano, Boston Pops, Fiedler, cond. RCA Victor FTC-2209, \$7.95.*

Music Performance Recording

Gershwin lovers (and who isn't?) will be especially pleased with this recording—a representative cross section of the composer's most popular compositions. Peter Nero and Arthur Fiedler's Boston Pops give an excellent, traditional performance of *Rhapsody in Blue*. The other selections—all popular numbers in new arrangements by Nero—are especially lively and listenable. Nero's orchestration very much is like putting a fresh coat of paint on a beloved old house. The supporting cast—the Boston Pops, provide their usual dazzling performance.

—W.G.S.

Victoria de Los Angeles

Cantos de Espana, and 20th Century Spanish Songs, *Victoria de Los Angeles, (soprano) accompanied by Paris Conservatoire Orchestra conducted by Rafael Fruhbeck de Burgos, and Gonzalo Soriano, piano. Includes Asturias, Jota, Nana, Farruca, Rutas, Pregon, Cophilla, Chereve, Seguidilla murciana. Angel Y2S 3673, \$7.98.*

Music Performance Recording

One of the great female voices of the age in a fine program of Spanish songs. There is something here for the art-song lover, and something for the aficionado of ethnic songs. Olde Timers may find themselves remembering through Miss Los Angeles performance the voices of Ninon Vallin, Maggie Teyte and Conchita Supervia. She effectively projects the refined qualities of all three, plus an abundance of her own inimitable artistry. This album belongs in the collection of every serious music lover.

—F.P.

Franchi

The Songs of Richard Rogers. *Sergio Franchi in My Funny Valentine, If I Loved You, People Will Say We're in Love, Blue Moon, Falling in Love with Love, Bali Ha's and others. RCA Victor FTP-1304, \$6.95.*

Music Performance Recording

Singing a selection of favorite Richard Rogers songs, Sergio Franchi exhibits a little too much operatic technique in some numbers, while others come off quite well. Trouble is, most of these songs were not written for such a well trained and wide-range voice. On the other side of the coin, Franchi brings a technical and artistic perfection to these songs that they rarely receive. Some selections receive performances that can really be called definitive. An excellent tape for Sergio Franchi lovers.

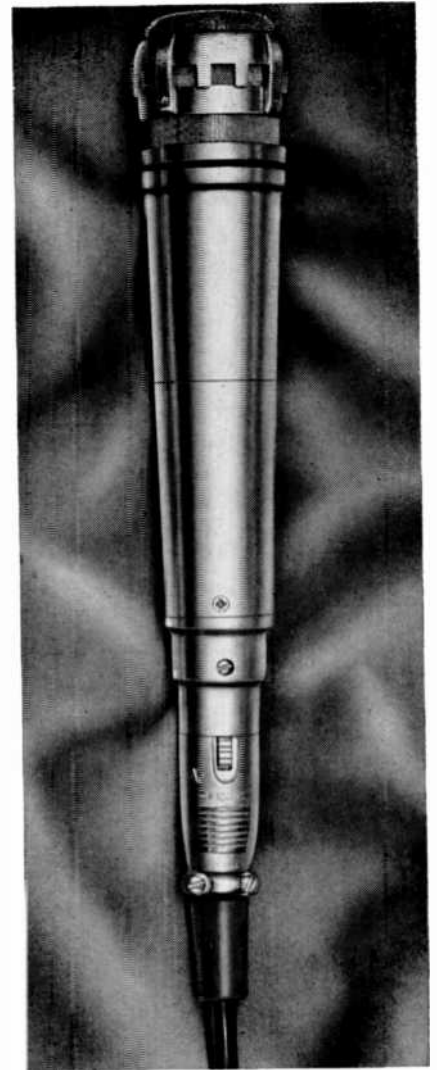
—W.G.S.

Norman Luboff Choir

Remember. *The Norman Luboff Choir singing Remember, Always, I'll Be Seeing You, Look to Your Heart, As Time Goes By, Together, and six other favorites. RCA Victor, FTP-1315, \$6.95.*

Music Performance Recording

"Simply beautiful" are the first words that come to mind when listening to this tape. Luboff has a sure winner on his hands. The selection of songs is an especially happy one for this ensemble. They give each number loving and lovely performance. All the songs are old-time



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TAPE REVIEWS

favorites which makes the recording that much more poignant and nostalgic. Songs like *Always, I'll Get By* and *The Very Thought of You* along with the nine other favorites make this tape a sure winner.

—W.G.S.

Aldrich

That Aldrich Feeling. *Ronnie Aldrich, his two pianos, and Orchestra in My Favorite Things, Mona Lisa, When I Fall in Love, The Sweetest Sounds, If Ever I Should Leave You, and seven others.* London LPL-74070, \$7.95.

Music Performance	◆◆◆◆
Recording	◆◆◆◆

It's certainly not a dancy tape and it's not exactly easy listening, but it is pleasant listening. Aldrich has provided some highly unusual and entertaining arrangements of old and relatively new standard songs. Featured are two pianos, one at each loudspeaker, plus bongos, tympani, vibre, xylophone, glockenspiel and a few dozen others. It's an unusual tape, made more so by the sanity of the performance. Many other bandleaders given so many exotic instruments would not be so restrained. Good show all the way around.

—W.G.S.

Heath

Chartbusters—*Ted Heath & His Music.* Ampex LPL 74074, Phase 4 Stereo. London 7½ ips.

Music Performance	◆◆◆◆
Recording	◆◆◆◆

Strictly instrumental, for relaxed listening, background music, or dancing, Ted Heath's "Chartbusters" collection of top contemporary hits is a welcome addition to anyone's tape library, regardless of music tastes. Each number is a hit in its own right; most are destined to be tomorrow's standards. The selection is well mixed, balanced and paced in rhythm and mood. Among the best are a torrid rendition of "Fever," the opening number; "Misty," featuring vibes, bass, and brass at moody, relaxed tempo; an unorthodox slow beat rendering of "Hello Dolly," featuring well-phrased trumpet solo. Other numbers, with Heath's great jazz treatment: "A Summer Place," "Never on Sunday," "Wives and Lovers," "Moon River," "Girl from Ipanema," "Mack the Knife," "People," and "Fly Me to the Moon."

Ray Charles

Young Lovers On Broadway—*Ray Charles Singers, RS 4T 890, Command, 7½ ips., \$5.95.*

Music Performance	◆◆◆◆
Recording	◆◆◆◆

For this album in his series of choral ensemble music, Ray Charles draws a pleasant mix of top show tunes from England, Broadway, and off-Broadway. He trims his group from 25 singers to 16, with the usual backing of Dick Hyman, organ and piano; Tony Mottola, guitar; Bob Haggart, bass; Bob Rosengarden, drums; and Al Casamenti, rhythm guitar.

The Ray Charles Singers perform well-arranged numbers, opening with "Consider Yourself" (Oliver); "Try to Remember" (The Fantasticks); "Matchmaker" (Fiddler on the Roof); title hits "On a Clear Day" and "She Loves Me." "Mack the Knife" (Threepenny Opera) offers an interesting treatment phasing from waltz to swing beat.

Magnante

Romantic Accordion, *Charles Magnante, includes One Note Samba, Always In My Heart, Serenata, Andalucia, Brazil, Amor, Patricia.* Command CMC 888, \$7.95. (From Ampex).

Music Performance	◆◆◆◆
Recording	◆◆◆◆

The efforts of the sidemen contribute greatly to this recital which otherwise might have been somewhat dull. Backing Magnante's great playing are Tony Mottola and Al Casamenti on guitars, Dick Hyman on piano, Bob Haggart on bass, Don Lamond on drums, with Ed Shaughnessy and Phil Kraus, percussion.

—F.P.

Cramer

Class of '65, *Floyd Cramer, piano, includes Cast Your Fate to The Wind, Red Roses for a Blue Lady, Try To Remember, Mr. Lonely, Downtown.* RCA Victor FTP 1311 \$7.95.

Music Performance	◆◆◆◆
Recording	◆◆◆◆

Right purty, but kind of monotonous. OK as background music for a do-it-yourself project.

—F.P.

Winding

The In Instrumentals—*Kai Winding, VSTX 344, Verve 3¾ ips., \$5.95.*

Music Performance	◆◆◆◆
Recording	◆◆◆◆

Here's a selection of music with the "Mod" generation appeal, yet arranged and orchestrated to appeal to the adult ear as well. Selections are well-placed in mood and tempo, a refreshing departure from any monotony typical of "yeah, yeah, yeah" beat over a prolonged period.

Album serves well as a good teen-party dance tape, strictly instrumental, highlighted by such numbers as "On Broadway," "Yesterday," "You've Lost That Lovin' Feelin'," "Mohair Sam," "I Know

a Place," etc. Winding does an especially well-arranged rendition of "Georgia on My Mind." Album also features two Kai Winding originals: "Sign of the Times" and "Foxy."

Carousel

Carousel, *Original Cast, with John Raitt, Eileen Christy, Susan Watson, Katherine Hilgenberg, Reid Shelton, Jerry Orbach, Benay Venuta and Edward Everett Horton.* RCA FTO 5037, \$8.95.

Music Performance	◆◆◆◆
Recording	◆◆◆◆

A faithful transfer from stage to tape of a great perennial. Music lovers who saw and heard this cast perform Carousel will want this album to relive the occasion.

—F.P.

Nelson

Rick Nelson Sings "For You", *includes Fools Rush In, Down Home, I Rise, I Fall, Just Take A Moment, Nearness of You.* Decca ST74-4479, \$7.95.

Music Performance	◆◆◆◆
Recording	◆◆◆◆



Bert Kaempfert

The Magic Music of Far Away Places, *Bert Kaempfert, includes Moon Over Naples, On a Little Street In Singapore, La Cumparsita, Mambossa, The Japanese Farewell Song, Monte Carlo, Hava Nagila, Star Dust, Autumn Leaves, Balkan Melody, Midnight in Moscow, and Swissy Missy.* Decca Stereotape ST74-4616, \$7.95. Speed 7½ ips.

Music Performance	◆◆◆◆
Recording	◆◆◆◆

This tape appears to be a half-hearted attempt to combine the once liked sounds of the old big band era, slow jazz, and

some of the yesteryear styles of European music. While listening to this performance, there are times when one begins to feel the pleasure of listening but suddenly the orchestration of the selection changes and the mood disappears. The stereo effect that Decca has achieved here is fair; however, the thinness and balance in the recording of the brass instruments has an overpowering effect against the rest of the orchestra.

The only acceptable feature of the tape is the selections chosen for it. —H.M.

Harnell

Golden Piano Hits, Joe Harnell and orchestra, includes Miserlou, Alley Cat, Near You, Take Five, Autumn Leaves, Polonaise, Snowfall. Columbia CQ 814, \$7.95.

Music Performance Recording

In an effort to turn these tunes into "new experiences", Joe Harnell has come up with a highly over-arranged collection that just misses containing the kitchen sink. Students of Overdone should find the set rewarding. —F.P.

Clancy Brothers

Isn't it Grand Boys, The Clancy Brothers and Tommy Makem, includes Nancy Whiskey, Galway Races, What Would You Do If You Married a Soldier, Eileen Aroon, Isn't It Grand Boys, and others, Columbia CQ 813, 7½ ips, \$7.95.

Music Performance Recording

The Clancy brothers have come a long way since the days when the older boys, Paddy and Tom, would regale their friends with Irish songs and stories in the White Horse Tavern in Greenwich Village. But, they have lost none of their lustiness or zest.

They are one of the few really "gutsy" folk song groups around and their spirited renditions are infectious. If you've never heard them, you are in for a treat. —B.N.

Peggy Lee

Then Was Then and Now is Now! and Pass Me By. Peggy Lee singing Trapped, Losers Weepers, Free Spirits, Then Was Then, The Masquerade is Over, Sneakin' Up on You, Pass Me By, Bewitched, You Always Hurt the One You Love, Dear Heart, and other old and new favorites. Capitol, Y2T-2374, \$9.98.

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old-time favorites and belting out a lively jazz number. Her repertoire reflects a many faceted singing personality that changes chameleon-like for a new rendition of each number. She's assisted capably by an excellent combo that complements her every mood. This double-header tape is an excellent buy for everyone—not just Peggy Lee fans—for that matter everyone *must* be a Peggy Lee fan after hearing this tape. —W.G.S.

Wayne King

Dance Time, Wayne King and orchestra, includes Charade, Red River Valley, Remember, If I Loved You, Ramblin' Rose, Scatter-Brain, Decca ST74-4551, \$7.95.

Music Performance Recording ◆◆◆◆

A first rate dance music collection in varied tempos for easy listening and easy dancing. Restrained vocals help create a "dانسante" atmosphere and a sense of live performance. —F.P.

Jan Garber

They're Playing Our Song, Jan Garber and his orchestra, includes Candy, You'll Never Walk Alone, Speak Low, Sentimental Journey, I'll Walk Alone, Decca ST74-4543, \$7.95.

Music Performance Recording ◆◆◆◆

Eleven fox trots and one beguine add up to a lot of dancing, plus a lot of listening. We suggest listening (and dancing) to one side at a time, otherwise you'll be worn out physically as well as aurally. Garber is quite pleasant in small doses; in big doses he tends to become a bit monotonous—as do many of today's orchestras that stick too closely to a "sound" that is meant mainly for identification purposes. —F.P.

American Airlines

Lush and Lyrical, Various artists from the Decca and Coral labels. Sixty-seven tunes in a three-hour program recorded at 3 3/4 ips. American Airlines Astrovision Popular Program No. 15. ST74-3438. \$23.95.

Music Performance Recording ◆◆◆◆

Carmen Cavallaro, Xavier Cugat, Peter Duchin, George Feyer, Pete Fountain, Earl Grant, Burl Ives, Henry Jerome, Jonah Jones, Bert Kaempfert, Sammy Kaye, Kingston Trio, Brenda Lee, Rick Nelson, and Gino Tonetti—all are on tap in this marathon tape intended for long journey listening. A worthy collection of talent and tunes. —F.P.

We Five

You Were on My Mind, We Five, includes Somewhere Beyond the Sea, My Favorite Things, Tonight, Cast Your Fate To The Winds, Small World, Softly As I Leave You, A&M AMXIII, \$5.95. (From Ampex)

Music Performance Recording ◆◆◆◆

Beverly Bivens, the lead singer of this group, has a marvelous facility for sounding like other female singers on the current scene.

Alex North

The Agony and the Ecstasy, music composed and conducted by Alex North, from the film soundtrack. Capitol ZO 2427, \$8.98.

Music Performance Recording ◆◆◆◆

A Hollywood film soundtrack need not sound like one. This album will go a long way toward proving that. From the opening majestic organ passages to the finale which features a choir, the listener is swept along in a flow of truly fine music with a strong classical feeling that tends toward the Baroque.

Barbara Streisand

My Name Is Barbra and My Name Is Barbra, Too, Barbra Streisand, arranged and conducted by Peter Matz, includes A Kid Again, I'm Five, My Pa, Sweet Zoo, My Man, Quiet Night, I Got Plenty of Nothin', Second Hand Rose, etc. Columbia double-pack, 3 3/4 i.p.s. HC-C4 \$9.95.

Music Performance Recording ◆◆◆◆

The above evaluation refers to the first side of this reel, My Name is Barbra. The side containing My Name is Barbra, Too, was a victim of poor quality control, totally unplayable.

Mormon Tabernacle Choir

This Land Is Your Land, Mormon Tabernacle Choir conducted by Richard P. Condie, and Philadelphia Orchestra conducted by Eugene Ormandy, includes Deep River, Shenandoah, Oh Susanna, Home On The Range, Sweet Betsy from Pike. Columbia MQ739, \$7.95.

Music Performance Recording ◆◆◆◆

Splendid recording and a spacious quality save this one. Somehow, after listening to a few of the selections, a tinge of monotony sets in and it is hard to shake. The Choir cannot be faulted. The orchestra plays two numbers without the chorus.

TAPE REVIEWS

Both are a sonic treat. Except for the two orchestral items, the album might be classed as a sing-along of gigantic proportions. —F.P.

Acker Bilk-Bent Fabric

Mr. Acker Bilk & Bent Fabric Together! Includes *Alley Cat, Cocktails for Two, What'll I Do, Blue Hour, These Foolish Things*. ATCO ATX 1408, \$5.95.

Music Performance Recording



Another gem in the annals of taped popular music. Great listening. —F.P.

The Rooftop Singers

Rainy River and That Ain't Love, Somebody Touched Me, Ezekiel, Noah, I Hear a Rumble, Alabama Bound, I Feel the Spirit, Buddy Won't You Roll and others. Vanguard 3¾ ips VTX 1708, \$5.95.

Music Performance Recording



The Rooftop Singers have the misfortune to be one of those groups which don't fit neatly into a pigeonhole. They're not folk singers—even the few folk songs they sing have been revised extensively, with new lyrics where necessary, with a change in melody here, a new mood there. They're certainly not rock and roll artists. They don't even qualify as folk-rock—that broad middle ground which has the beat of rock and roll, the protest of some folk music and precious little else. Protest the Rooftop Singers most certainly do in these songs. "Buddy, Won't You Roll" started out as a union organizing song. It's been updated here. So has "Ezekiel," a song about a rustic mystic who has become a locomotive engineer. The updating may offend folk purists, but the protest is neither as subtle or as unpleasant as that in many of the folk-rock ballads. It's actually a rather refreshing experience. Sound quality is adequate to the material. —E.B.

Allan Sherman

My Name Is Allan, Call Me Irresponsible, Peyton Place, That Old Back Scratcher, The Drinking Man's Diet, Secret Code, Go To Sleep Paul Revere, An Average Song and others. Warner Brothers 3¾ ips WSTX 1604, \$5.95.

Music Performance Recording



Allan Sherman is an acquired taste. If you've acquired it, nothing in this review will convince you that you shouldn't rush right out and buy it. Not that we want to do that anyway. This tape runs approximately 26 minutes, which leaves a good deal of empty space on a 7" reel, but it contains its share of laughs. Singer (c) Allan Sherman has put all of us

weight-watchers in our place with his exposition of "The Drinking Man's Diet." Then the Goody Two Shoes set get theirs in "Chim Chim Cheree." We're told by dyed-in-the-wool Sherman fans that this isn't his best album. But it's a good one, for a pleasant surprise. —R.A.

Brenda Lee

All Alone Am I. Brenda Lee with chorus and orchestra conducted by Owen Bradley, including *All Alone Am I, I Left My Heart in San Francisco, It's All Right With Me, My Coloring Book, Lover, All By Myself, What Kind of Fool Am I?, Fly Me to The Moon, and others.* Decca, ST 74-4370, \$7.95.

Music Performance Recording



You don't have to be a Brenda Lee devotee to like this one. Miss Lee takes a bagful of all-time and relatively new



Brenda Lee

favorites—songs that everyone likes—and stamps them with her inimitable style. The numbers that should be lively, have plenty of bounce. Then the mood changes, chameleon-like for such semi-sad numbers as *My Coloring Book* and *My Prayer*. Miss Lee is a thoroughgoing professional. Her orchestral and choral accompaniment are never overdone; rather they serve to set and accent the mood of a song. This is not just another collection of popular songs—it is remarkable testament to the talents of a remarkable performer—an excellent addition to any tape library. —W.G.S.

Connie Francis

Jealous Heart. Connie Francis with orchestra and chorus, singing *Jealous Heart, If You Ever Get Lonely, Everything I Have is Yours, Do I, Ivory Tower, My Foolish Heart, Nevertheless, So Long*

Good Bye, and other favorites. MGM, STX 4355, \$5.95.

Music Performance Recording



Miss Francis has a pleasant voice, manner and presentation, but little variety. There is an uncomfortable sameness about all of the songs in this tape, heightened by the gradual change of mood from the brisk to the moderate, instead of programming alternating contrasts. Connie Francis is gifted with an excellent voice and technique, but a little goes a long way. The recording was made at 3¾ ips, a growing trend in the recording industry. The recorded sound is good, but loses some brilliance because of the slow tape speed. An annoying amount of print-through was also noticeable. —W.G.S.

—W.G.S.

Latin Disotheque

Latin Disotheque. Rene Hernandez, Pedro Garcia, Jo Basile, Os Saxsambistas Brasileiros, and other Latin bands deliver up their disotheque specialties, including *Patricia, LaCruz, Mambo Italiano, Rum and Coca Cola, Torero, Cachita, Brazil, Meditacas and Night and Day.* Audio Fidelity, AFX 7044, \$5.95.

Music Performance Recording



This tape is designed for disotheque fans and that should be sufficient comment. It contains a good representation of several Latin American orchestras. Perhaps the tape fills the bill for the Disotheque gal in the glass cage, but for more mundane sacroiliacs, keeping up with the music might be a problem. Technically, the tape sounds on the tinny side, and this harshness can't be blamed on the slow (3¾ ips) speed. It's plain, old, ugly overmodulation. However, on the plus side, the tape does offer a wide range of dances, designed specifically for the young at heart and limber of spine. —W.G.S.

—W.G.S.

Horst Jankowski

More Genius of Jankowski. Horst Jankowski, his piano, orchestra and singers in *Heide, Canadian Sunset, Alpine Highway, Sunrise Serenade, Third Man Theme, Play a Simple Melody, and others—Mercury.* STC-61054, \$7.95.

Music Performance Recording



A pleasant, almost unrealistic, smooth piano with a distinctly European-sounding orchestra combine to form a pleasing, unobtrusive tape suitable for almost any occasion except a dance party. Four of the numbers are Jankowski compositions, and they provide a somewhat livelier beat than the other selections. Overall, a very pleasant recording although hardly spectacular. —W.G.S.

—W.G.S.



The Microphone In Your Living Room

by Walter G. Salm

*...most professionals look upon mike placement as an art . . .
the procedures and practices outlined in this article should in-
sure acceptable results for most tape lobbyists.*

In previous issues we have discussed how microphones work, their characteristics, and the accessories to be used in conjunction with them. Now we come to the heart of the matter—how to use a mike properly, that is how to place or position it in order to achieve the best possible results.

If, like most of us, you have tried your hand at home recording, you've probably noted that the results have not always been completely satisfactory. It doesn't seem to matter how careful you are, something always seems to go wrong. More often than not, the principal fault can be traced to "mike placement". Knowing where to put the mike always takes a certain amount of practice; it is a trial and error procedure. That's why most professionals look upon mike place-

ment as an art. There really aren't any hard and fast rules for mike placement, but the procedures and practices outlined should insure acceptable results in most instances.

In those situations where there are a certain amount of background or ambient noises, a cardioid microphone such as the Shure 55-S is called for. Microphones of this type, when placed properly, can eliminate at least 90 per cent of unwanted background noise. In use the cardioid microphone is positioned so that the back of the mike, its dead end, faces the source of extraneous noise. The performer is then positioned so that he faces the most sensitive side of the mike.

Ideally, a dynamic microphone should be placed approximately six to 10 inches from the per-

former's mouth or instrument. When placed at greater distances, the microphone will start to pick up background noise in spite of its directional characteristics. Also, the output level will be lower and this will require cranking up the recording level control, which in turn degrades the signal-to-noise ratio of the recording. If the microphone is too close to the performer, it will tend to pick up sibilant noises, breathing, and other unwanted sounds from the performer himself.

A cardioid microphone is especially useful for stereo recording since its graduated sensitivity on the sides makes it relatively easy to place for best directional pickup. However, the cardioid has its limitations and these become evident when several people try to cluster around the microphone as in a singing group. In such case, an omnidirectional microphone is much more suitable.

The best kind of microphone for recording duets would be a bi-directional velocity type. When using a microphone of this type, face either of the dead sides toward the unwanted background noise and place a performer on each of the two live faces. Remember when using the velocity microphone that it is extremely fragile and should be handled with tender, loving care.

The velocity mike is also quite useful when a performer sings and accompanies himself with a musical instrument at the same time. If a single microphone technique is called for, the mike can be placed somewhere between the performer's mouth and the musical instrument itself. To achieve a better balance between the instrument and the voice, the mike can be placed closer to the performer's mouth and oriented in such a way that it does not receive the full force of the instrument on the other side. On the other hand, a really good balance between the performer and the accompanying instrument is much easier to attain by using two cardioid microphones, one for the vocals and one for the instrument, and feeding them both into an audio mixer.

If you decide that microphone adjustment is necessary during a recording session, do not attempt to make any changes while the recording is in progress because any movement of the mike or friction mount will be picked up and recorded. Wait for a break or the end of the number. Then you can make the adjustment, and check to see that you are getting the kind of results you desire.

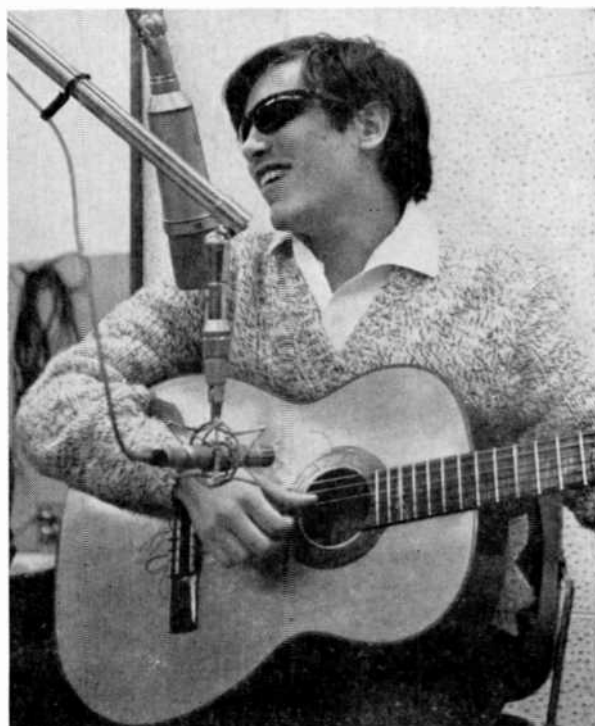
It is always a good idea to monitor these sessions continuously with stereo headphones connected to the playback equipment, while keeping

an eye glued on the VU meters. Where possible, always try to record in stereo since this affords you great flexibility.

When you record in stereo, the two channels can be mixed in any combination for a monophonic duplicate tape. For the novice, a multiple mike monophonic recording is much more difficult, because it involves the use of a mixer and if the mikes are improperly balanced, you're stuck with the results. If the master recording is in stereo, you can adjust the relative balance between the two microphones when dubbing, until you get precisely the type of recording you want.

Naturally, there is little excuse for improper balance in a master mono recording if you use the right type of mixer and the controls are set properly. However, in some cases it's quite possible that the people in the recording group may want copies of the tape in either mono form, two-track, or four-track, depending on their own playback equipment. Again, by mastering the session in stereo, you have flexibility. You can duplicate the tape in stereo or mono, in any form that can be produced by your equipment.

Because of this balance problem recording companies generally make their master tapes with as many as eight channels on the original. They



Note the placement of small mike for guitar.

The Microphone in Your Living Room

then rebalance these channels, mixing and combining until they achieve the "ideal" two-channel recording.

Another advantage of recording in stereo is that if a mixer *must* be used, stereo recording virtually doubles the number of mikes that can be accommodated at any one time. A standard mixer generally will take four mikes per channel. A typical mixer of this type is the Bogen model MX6A. This is a monophonic tube-type mixer with four inputs, two of which can be used either with high-impedance mikes or phono inputs. The other two work with high impedance mikes only. The output is a low-impedance cathode-follower circuit which can be plugged directly into the auxiliary input on any stereo amplifier. For proper use with a tape recorder, an impedance matching transformer should be used, in exactly

nected in stereo or feeding an audio mixer.

The small fry are of course ripe sources for tape recording sessions. Unlike grownups, they love to ham it up for a microphone if they can first be convinced that it won't bite them. Where a certain amount of microphone stage fright is involved, it may be necessary to dress up the mike, disguising it as a puppet, doll or whatever imagination brings to mind. If such disguises are resorted to, be sure that any appendages attached to a microphone do not interfere with the sound path to the diaphragm. At the same time, don't be afraid to resort to such strategy since this approach often works quite well.

There may be times when a hidden microphone, or a "bug" in a room may be necessary to obtain the kind of spontaneity required. Don't hesitate to use such approaches, but at the same



In stereo recording the placement and number of mikes govern the quality and depth of the recording.

the same way that you would use a matching transformer between a low-impedance microphone and a high impedance tape recorder input.

When recording a group of people, it often-times requires several test runs to get the proper balance. Invariably one person sounds louder than the others while perhaps someone else has a very soft voice. Obviously the person with the loud voice should be moved further away from the microphone, while the low-toned singer should be moved in closer.

Another special case can involve a mother and daughter duet where the youngster is considerably shorter than the parent. These two cannot be expected to share the same microphone since there is a height problem. The solution to a situation like this is to use two microphones con-

time bear in mind that the kind of fidelity and signal-to-noise ratio resulting will not provide as good a recording as that which you can get under more controlled conditions.

The importance of the microphone's pickup pattern can't be overemphasized, since ultimately these characteristics define the kind of microphone you will use, how you will use it, and what compensating measures you must take during your taping session. Bear all of these points in mind and simply use a little common sense in placing the microphones. Remember that if any of them are equipped with built-in on-off switches, be sure to tape these switches in the on position. All too often nervous fingers fiddling with a switch of this kind have ruined otherwise perfectly good recording sessions.

tape

EQUIPMENT REVIEWS

We believe that there are four major categories of recorders on the market today, each requiring a different type of testing to produce the maximum amount of information for a prospective purchaser or user. There are the economy models, primarily designed for tape beginners on a budget; moderately priced machines for general home use; component-quality recorders and decks; and battery-operated portables. The first group, which generally includes those machines priced under \$200, are judged on the basis of value for money, ease of operation, features and durability of construction. Those in the middle price range (from \$200 to about \$350) are judged on these bases plus their high fidelity characteristics. Since some purchasers will be interested in sound fidelity, we publish those test results which best indicate the capabilities of the unit to the user. For component-quality recorders and decks (those priced above \$350), we include full test results and discussion of construction as well as data on features, ease of operation, etc. Since most battery-operated portables are admittedly of limited fidelity, our reports concentrate on reliability, quality of construction, ease of operation, portability and other factors more likely to be of interest to the portable user. Those few battery-operated portables which do claim to be component-quality units will be reported on with full technical details.

We have adopted this procedure of testing and reporting because we believe it can best help readers to find the right machine for their particular needs and because it seems to us patently unfair to compare the technical capabilities of a \$149 recorder with one designed to sell for twice or three times as much.

DeJur-Grundig C100



One of the newest cartridge-type recorders to hit the American market, this import from West Germany has many features to commend it. It uses a double cassette cartridge remarkably similar in appearance to the type initiated in the Norelco "Carry-Corder" series, although somewhat larger. The DeJur people have named their unit the "Super-Corder."

The machine is of a size that precludes its use for hidden recording applications. It measures $11\frac{1}{2} \times 7\frac{1}{2} \times 3\frac{1}{2}$ inches. This makes it an ideal "companion" type of machine which can be carried as easily as an old-fashioned tube-type portable radio, and can also fill in as a desk-type machine.

The optional power pack designed for the C100 is ingenious. In its standard configuration, the C100 accommodates six size "D" batteries. When operating on AC, the entire battery compartment, including its plastic holder, slides out of the case and is replaced by an AC adapter of the same size and shape—complete with transistorized rectifier and regulator circuitry and a line cord with a built-in switch. The optional power pack has a retail list of \$22.50. This AC power pack carries ingenuity to its pinnacle by providing a compartment for storing the line cord, plug and switch. With one turn of a screw-head, it goes from 110 to

220 volt operation, too.

The machine uses a six-push-button keyboard for its basic operations, including one extra "plus" feature—a "pause" control. Separate volume and tone controls are provided, along with an edge-reading VU meter. All the controls are conveniently and sensibly grouped near one end of the machine in such a way that it can be used lying flat on a table or while being carried by its handle. The fast forward and rewind buttons are the non-locking type—they must be held down during the entire winding time.

The one perhaps disquieting feature of this machine is the absence of an on-off switch on any microphone supplied. This lack is however made up for by the pause control, since this can operate the machine just as effectively as a remote switch, although perhaps not as conveniently. The "Off" button not only stops the mechanism, but also will eject the tape cartridge, which is virtually buried in the machine and impossible to remove otherwise.

Reproduction quality on voice is remarkably good with either of the two microphones tested. Music reproduction of pre-recorded tapes is quite good for a machine of this size—approximately comparable to the sound from a good FM transistor radio with a five-inch speaker. Presumably, one of its primary functions will be to provide entertainment on the go. There is a growing library of pre-recorded tape cartridges available for this machine.

The tape in the cartridge is narrower than standard audio tape. The machine records and plays back $\frac{1}{2}$ track—providing 45 minutes of playing time for each of the tape's two tracks, for a total of 90 minutes per cartridge. Of course, with a machine of this kind, if you're not happy with the library of recorded tapes available, it's a quite simple matter to patch in

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EQUIPMENT REVIEWS

and record a program of your own music selections. Blank cartridges carry a list price of \$4.50 and pre-recorded tapes with the music equivalent of up to two lp's carry a list price of \$7.95 and \$8.95.

One somewhat unusual thing we noted is the excessive amount of damping in the VU meter. What this means is that the meter will not respond rapidly to sudden, loud transients, and as such, appears much less "nervous" than other machines' meters do. It might have the same quieting effect on the nerves of the recorder's owner as well.

The C100's pushbutton keyboard is easy to use and has a legend for the keys marked off for readability in both horizontal and vertical positions.

The jacks provided include a standard microphone input, an output for earphones, or conceivably an external speaker, and an auxiliary power input that presumably can be plugged into an automobile's cigarette lighter socket. All in all, this is a well-conceived and well-designed unit.

* * *

Claricon



Unlike many of its counterparts in the battery portable field, this unit accommodates a full-size five-inch reel. This means, of course, much longer playing time for a

given reel of tape and also provides a certain amount of interchangeability with larger, AC operated units.

At the 3 3/4 ips speed, the machine reproduces remarkably well for voice in a variety of modes. Intelligibility level is extremely high, and the machine seems to be free from many of the problems that have plagued other transistorized recorders in the past.

It has a piano-key type push-button control panel consisting of four buttons very nicely interlocked. Unfortunately, the provision for fast forward consists of pressing the "play" and "rewind" buttons simultaneously, which releases the felt pressure pads and allows the normal takeup reel tension to provide the "fast" forward. Quite naturally, as a result, the winding speed leaves a great deal to be desired.

The rewind speed, on the other hand, is quite fast and positive-acting. The volume and tone controls are grouped conveniently close to the pushbuttons as is the VU meter. The meter is large size and easy to read and is a welcome sight on a tape recorder in this price range. As with other tape recorders, it doubles as a battery-condition checker.

The unit operates on four size "D" batteries, or will operate directly from AC with the line cord provided. The microphone is deceptive in its appearance—looking very much like the type supplied with dime-store machines. It's deceptive, because this miniscale mike provides excellent voice fidelity. It also has a built-in remote-control pushbutton switch which adds to the recorder's operating ease.

Changing speeds to 1 7/8 ips is by the conventional method—unscrewing and removing a sleeve on the capstan. Accessory jacks on this machine include one for earphone

Tape Recording

and an auxiliary input, such as radio, TV, phono, etc.

The Claricon's five-inch reels are completely self-contained and it will operate with the plastic cover in place. This makes it possible to carry the machine in true portable fashion while recording or playing back. It also operates very nicely as a desk model and is quite lightweight—even with the four batteries in place.

The large tape reel size means that the user need not worry about the tape running out during telephone conversations and other long recording sessions. The reel will hold 1800 feet of triple-play tape, which at 17/8 ips will play for three hours in each direction for a total of six hours.

The tape guide mechanism is simplicity itself, and there seems to be no chafing or tape twisting. The tape reel locks work very positively, gripping the reels tightly in place so they cannot slip off, even during "on the go" recording sessions. They are, however, rather stiff, making reel loading a two-handed operation. Overall, the machine seems to be an excellent value.

* * *

Concord 300



Designing the perfect battery tape recorder can present some-

thing of a problem to the manufacturer. Should it be big or small, or somewhere in between? There are other requirements that such a machine should fulfill, such as the precise amount of portability desired and basic ease of operation. Naturally, providing certain features must of necessity compromise others. A truly portable machine cannot be used in full AC fashion without the use of an accessory AC adapter, which can oftentimes be costly. On the other hand, the machine designed for AC only operation does not usually lend itself to portability.

The Concord 300, while certainly not as compact as some of its cousins—notably the "Sound Camera" series—is still a portable tape recorder in the finest sense of the word. It measures 10 1/2" x 9" x 3 1/2". True, it's large enough to occupy nearly half the inside of an attaché case, but this is obviously because one of its intended functions is to operate as a desk-type unit for dictation and other non-mobile applications.

Unlike many other battery portables, an AC cord is included along with a built-in AC adapter. It is simply a matter of plugging in the recorder to any 110 volt AC outlet, and voilà, the machine is a desk model recorder.

An unusual and extremely useful feature of this machine and one that comes in quite handy, is a double set of record/playback-erase heads. This is the first battery portable we have seen that records and plays back in either direction without reel turnover. The machine has a center-mounted capstan drive with one set of heads on either side of the drive mechanism. The direction of tape travel during record/playback, and incidentally, for fast rewind/forward as well, is controlled by a single lever which is moved in the direction of tape travel desired.

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A positive-acting record lock button is conveniently located as is a monitor/power switch. Recording level is monitored on a VU meter next to the record lock button. The meter is large and easy to read, and of course doubles as a battery condition checker. The capstan-driven machine is designed for two-speed operation, the change in speeds being made by removal of a sleeve on the capstan itself. The reproduced fidelity seems quite good, especially at $3\frac{3}{4}$ ips speed. The slower speed ($1\frac{7}{8}$ ips) provides an adequate voice recording—certainly clear enough for most voice-only applications.

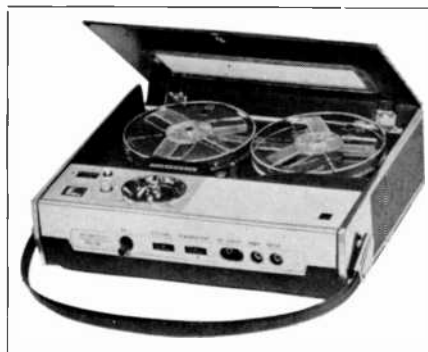
Accessories include a foot-control switch, telephone pickup and a well-designed microphone with built-in on-off switch. The mike case is slotted to fit into a plastic desk stand that comes with the recorder. An accessory jack accommodates such auxiliary inputs as TV, radio or phonograph. A second jack can be connected to an external speaker or earphone. The built-in speaker provides remarkably crisp reproduction for a machine of this size.

Operation in general is very good with the controls grouped conveniently. The reels can be watched through a large clear plastic window in the lid. The reversing operation is quick and easy, and saves a lot of fumbling time that might otherwise be required. This feature itself may be a good answer to the cartridge portable machines that have proliferated on the market recently.

The machine takes four-inch reels, and such a reel with triple-play tape can record up to three hours at the $1\frac{7}{8}$ ips speed. From all indications, Concord has produced an excellent piece of equipment in the Model 300.

* * *

Panasonic RQ 152S



It seems to be axiomatic in this business that tape recorders get better and better, and this machine is certainly no exception. By battery portable standards, the Panasonic RQ152S is large. It measures $11\frac{3}{4} \times 9\frac{3}{4} \times 3\frac{1}{4}$ —too large to be carrying around in your pocket—but it does function beautifully as a briefcase-type machine and as a desk model for dictation or any other stationary applications. An AC adapter is built in as it is with many machines in this category.

The controls are grouped in one area at the end of the machine where they can be reached fairly well, even when the machine is being carried by its handle. As with most Panasonic machines, this one has a single rotary control for all of the recorder functions.

The fast forward is a function of the "play" position on the rotary control bar. It is achieved by pushing a button when switching to "play/fast forward" which disengages the capstan and felt pressure pads. The fast forward speed is then obtained by the normal tension in the takeup reel. As a result, it's not as fast as we'd like to see it. The rewind, on the other hand, is quite fast and positive acting.

The machine has separate control lever positions for record and

play, and of course, a separate record lock button. A VU meter indicates recording level and battery conditions. Unlike other machines in this category, this one includes a digital counter along with an instant-acting press-to-reset button.

The built-in speaker provides adequate sound. As might be expected, when connected to a full-size playback system, the playback sound is considerably improved. A tone control is incorporated, but since it cuts down the high frequency response considerably, it should be used sparingly.

The microphone contains a remote control switch, which makes the machine easy to use for dictation, interviews and other on-the-go recording situations. Reel size is five inches, providing up to six hours recording time for a 1800-foot reel of tape at $1\frac{7}{8}$ ips.

Batteries required are six size "D" cells and the battery and AC cord compartments are readily accessible in the bottom of the case. This two-speed machine provides excellent fidelity at the $3\frac{3}{4}$ ips speed. Speed change is by the usual battery-recorder technique: removal of the capstan sleeve.

Included among the accessories are a monitoring earphone, and a patch cord for recording directly from TV, radio, phono and other such sources.

One interesting feature is that the speaker can be left on during recording for monitoring purposes. Alternatively (especially to avoid feedback) the recording session can be monitored by plugging in the earphone, thus cutting off the speaker. This type of arrangement can be especially useful when recording at a distance or from a telephone pickup.

All in all, this is quite a nice machine that is as convenient to operate as any with this size reel. If you don't mind the size and bulk, it's a worthwhile investment.

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BILL DOWNS, 410 W. 115 St., N. Y. 25, N. Y. Owns G-E, mono & stereo, 3¼ & 7½ ips. Interested in modern ideas, drama, movies, "collector's items". Will answer all tapes, U.S. and foreign, especially Montreal, Can., England, Sweden, & Italy.

ROBERT J. FLEISCHER, 136 Greenlawn Ave., Clifton, N. J. 07013. Owns Wollensak 1580, four-track, stereo & mono, 3¼, 7½ ips; Revere T-100, two-track, mono, 3¼ ips Norelco 101 two-track, mono, 1⅞. Interested in photography, electronics, science, shortwave & broadcast band DX; folk, rock & roll; age 17.

FRANKLIN GAINER, 1912 Coon Rd., N. Ft. Myers, Fla. 33903. Owns mono, 3¼ ips. Will answer all tapes, any subject, U.S. and foreign.

GARY GREINER, 30 Garden Ct. So., Garfield, N. J. 07026. Owns Ampex 1070, mono & stereo, 1⅞, 3¼, 7½ ips. Interested in music, comedy, opera, opinions, hunting, fishing, general discussion. Age 35. Wants U.S. and foreign English only. All tapes answered.

EDWIN KNAPP, 300 N. Grant Ave., Three Rivers, Mich. 49093. Owns Wollensak T1515, Roberts 770, Norelco 301, all speeds, all tracks. Interested in old radio programs, especially late afternoon childrens shows of 30's & 40's. Large collection available for trade.

GARY KOTCH, 1495 Ridgewood Ave., Lakewood, Ohio 44107. Owns Eico and Roberts, stereo, 7½ ips., Bell T333, four-track. Interested in announcing, editing, electronics, science fiction, photography, attending electronics school, studying TV and radio announcing. Age 19.

ESTHER R. MANN, 2354 Hemlock, Concord, Calif. 94520. Owns Norelco 400, 1⅞, 3¼, 7½; Courier 17½ and 3¼; two-track. Housewife, interested in books, poetry, records, travelogues, trips, and will exchange ideas on recording, editing, dubbing, direct input.

GENE PATERSON, 2722 E. Hampshire, Milwaukee 11, Wis. Owns Ampex 860, stereo 1⅞, 3¼, 7½; will also record four-track mono. Interested in jazz, modern

classical music. Musician who likes all styles and schools of jazz; also folk music and primitive. Speaks Spanish & French—conversations.

BERNARD P. RABB, 234 Clinton St., Brooklyn 1, N. Y. Owns Akai M7. Interested in classical music and historical opera performances, standard repertoire and symphonic works. Will answer French correspondence, Germans writing in English.

BRUCE SHERMAN, WV1P, 13346 Sherwood, Huntington Woods, Mich. 48070. Owns Concord 220T, mono, 3¼ & 7½ ips. Interested in high fidelity, tape clubs, photography, metaphysics, pop music and radio. Teenager, will answer all tapes.

GERHARDT J. STEINKE, Box 882, Mayville, N. Dakota. Owns Ampex 860, Norelco 401. Interested in "spoken word", dramatic, cultural, documentary recordings in English, German, Spanish & French. Will exchange language instruction tapes.

BILL STIVELMAN, 550 Warner Ave., Los Angeles, Calif. 90029. Owns Sony 777-S4, Sony 250A, stereo, 7½, 3¼, 1⅞ ips. Interested in Wagner, Beethoven, Brahms, has photography darkroom, conducts music. Age 10, wants 10 to 16.

LARRY UNGERMAN, 385 Nash St. #F, Akron, Ohio 44304. Owns Panasonic RS7555, stereo, 1⅞, 3¼, 7½ ips. College student from Canada. Will trade, buy, or sell tapes and records. Interested in music, sports. Will answer all tapes.

WILLIAM WEICHER, 31 Chase St., Lowell, Mass. 01852. Owns Panasonic RQ102S, mono, 1⅞ & 3¼ ips. Interested in old radio: drama, mystery, science fiction, etc., show biz, documentaries, Armed Forces radio. Especially wants the Carnation Hour with Buddy Clark. Will answer all tapes.

BOB J. WILLIAMS, Dept. of Psychology, Lima State Hospital, Lima, Ohio 45802. Owns Uher 4000L, dual-track mono, 15/16, 1⅞, 3¼, 7½ ips., maximum 5" reel. Interested in psychology (especially forensic) and relations between psychology and religion. Age 37; English only. Especially interested in European tapespondents.

ARTHUR CHIMES, 30 Fieldstone Dr., Livingston, N. J. 07039. Owns a Lafayette RK-137-A four-track mono, 3¼ & 7½ ips. Interested in broadcast satire, radio, early

television, UFO's. "You name it, I'm interested." Teenage, adults. Will answer all tapes.

CPL DESSENT, 3 RAAF Hospital, Richmond, New South Wales, Australia. National portable, Shillib Model E13547A (four-track stereo), Sony 500A (four-track stereo), 1⅞, 3¼, 7½ ips. Member of Royal Australian Air Force, age 35. Interested in classical music, world affairs, geography. Has traveled throughout Australia, S. Africa, India and England. Will record at any speed, and answer all tapes. MORRIS EDELMAN, WMAE, 13342 Sherwood, Huntington Woods, Mich. 48070. Owns Wollensak 1220, mono, four-track, 3¼ and 7½ ips. Interested in photography, model rocketry, travel, electronics. Teenagers preferred, will answer all tapes.

JEAN LURASCHI, 2519 Cottage Ave., N. Bergen, N. J. Owns Norelco Carry-Corder 150, mono, stereo. Interested in jazz tapes, old and new, Al Jolson, Sinatra, Milton's Paradise Lost, Omar Kyam, poetry old and new.

RICHARD TROUT, 918 Main St., Bethlehem, Pa., 18018. Owns VM Model 740 Stereorecorder, four-track, mono and stereo, two-track mono and stereo, 1⅞, 3¼, & 7½ ips. Age 26, single, interested in science, photography, phenomena, UFO's, etc. Member of ISGS, also likes psychology, logic, hypnosis, sound effects. Will send short tape on A (non-aristotleianism) if requested.

Would you like to be included in next issue's listing of tapespondents? To be sure you are, just fill out the coupon—the more complete the information you give, the better—and mail to TAPESPENDENTS Editor, TAPE RECORDING, 156 East 52nd Street, New York 22, N.Y.

Name _____

Address _____

City _____

State _____ Zip Code _____

Recorder(s) _____

Prefer tapes: (please check) mono stereo
 1⅞ 3¼ 7½ other

Pop Sounds

by Richard Ekstract

"POW!"
"BAM!"
"ZONK!"
"ZAM!"

Is it the neighbors brawling again or is it Batman, the latest "Pop Culture" denizen to invade our homes via the TV screen? Maybe it's a new hit record. Or, could it be James Bond fighting a Spectre agent?

Could you tell?

Pop Culture is everywhere these days: in our galleries and museums, in newspaper and magazine ads, in discotheques and even in movies and on television. Comic book and movie heroes of the past are the new cultural heroes of today. The most expensive Broadway musical in history is the forth-coming, "It's a Bird, It's a Plane. . . It's Superman!" And with all this, there are sounds. But is anybody listening to the sounds of America today? Do they mean anything?

Some observers feel Pop Culture was spawned by the Pop Art movement. Some say Pop Art was a revolution against the limitations of the abstract expressionist movement in art. Some say it is just a grand spoof. Others say it's a serious attempt at social commentary on the vulgarities of our materialistic society. Some say that's what folk-rock is all about, too. . . and much of our present literature and poetry.

TAPE RECORDING readers, your moment is at hand. You, too, can Rebel if you like. Produce art, if you can. How? Join the *new* Pop movement.

"The trouble with many people these days is they don't really listen to so many of the sounds that we live with every day," says Henry Geldzahler, Associate Curator of the Metropolitan Museum of Art and one of the most important figures in the art world today. "We *have* to tune in on many sounds such as the honking of a horn or the ring of a telephone or a doorbell at home but a murder could be happening in the street outside and many people would be completely tuned out. It's just not part of their world—so they don't listen. It's a pity that we haven't learned to really listen to more of the important sounds that surround us because there's much that's fascinating—even beautiful."

Yes, there is art in the sounds we hear just as there is in all of nature. Mr. Geldzahler agrees and so do many of the nation's most prominent artists, some of whom are currently experiment-

(Continued on next page)

Editor's Note: Film makers have film festivals, amateur photographers have contests for prize photos, artists compete in public exhibitions and even writers compete for prizes with their work. In the belief that sound recording is an art form, the editors of TAPE RECORDING offer herewith a new competition to tape recordists. We tried to make this contest a little off-beat and interesting. Without doubt, this is the biggest tape recording contest ever held anywhere. See details at left:

First Award



Ampex Home Videotape Recorder with Camera

12 of These



Koss 'Pro' Stereophones

Twelfth Award



Matched pair of Shure Uuidyne III microphones

Second Award



Viking 880 portable stereo recorder

25 of These



Concord F-85 battery portable

12 of These



Telex stereo headphones

ing with sound. A few are adding sound to works of art and sculpture. Others are exploring tape recording as a new medium of communication. We now invite you to do the same.

We're calling the new movement, "Pop Sounds." You could also call it, "The Sounds of America Today." What we're after is a new medium of self-expression that will mirror present day society. All you need for this new art is a tape recorder and a little editing ability.

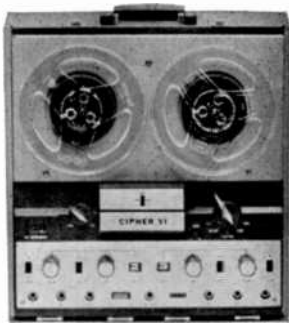
Perhaps you're interested in social commentary. Fine, make a "Pop Sound" tape. Perhaps you'd like to comment on the sounds that many of us take for granted such as the roar of a dishwasher or the whack of a bowling ball hitting ten pins or the jangle of a garbage truck. Television and radio commercials can be the basis for interesting "Pop Sound" tapes. In fact, we recently experimented with a sound-activated recorder placed

next to a television receiver's speaker with a certain volume level required to activate the recorder. We got some interesting results.

Perhaps you'd like to spoof it all, be funny, far out or satirical. Welcome. You might like to tape children. They say some very revealing things about us. You could experiment with speeding up a tape or slowing one down. Or, did you ever play a talk or music tape backwards? We don't want to suggest too many possibilities or directions because we don't want to restrict your thinking. You can make "Pop Sounds" alone or with a group. You could even have a "Pop Sounds" party at home.

We're offering over \$10,000 worth of prizes for the best "Pop Sounds" tapes plus a public listening of your tape at a prominent art gallery in New York late next fall along with tapes made by some of the most prominent people in the

Fifth Award



Cipher VI portable stereo recorder

25 of These



Norelco "Carry-Corder" Model 150

Sixth Award



Matched pair of Electro-Voice 676 Dynamic Cardioid Mikes

art and entertainment world today. Contest entries will be judged by a panel consisting of many of the nation's foremost artists, including Andy Warhol and Marisol.

Sound like fun? That's what we want it to be. It's the easiest contest ever. Nothing to buy. No boxtops. The only limitations we suggest are tapes of a minimum length of 20 seconds and a maximum of three minutes—so that judging won't be too difficult. And since many people associate "Pop Sounds" with popular music—no music tapes, please. That's all. No other restrictions. Identify your work. Submit tapes on three inch reels, if possible. Tapes cannot be returned and all entries become the property of TAPE RECORDING magazine. Now, for a list of the many prizes, see award list at right. Enter as many times as you like. A list of the award winners will be published. Contest closes Sept. 15, 1966.

"POP SOUNDS" AWARD LIST

Approximate Value

1st Award—AMPEX home videotape recorder and camera	\$ 2000
2nd Award—VIKING 880 tape recorder	\$ 440
3rd Award—OKI 555 tape recorder	\$ 350
4th Award—UNIVERSITY matched pair of Model 1000 professional, dynamic cardioid microphones	\$ 248
5th Award—CIPHER VI tape recorder	\$ 240
6th Award—ELECTRO-VOICE matched pair of gold-plated 676 dynamic cardioid microphones	\$ 220
7th, 8th, 9th, 10th Awards CONCERTONE Cosmopolitans ...	\$ 200 each
11th Award—ELECTRO-VOICE "Entertainer" home entertainment system	\$ 199
12th Award—SHURE Unidyne III matched microphones	\$ 170
13th Award—VIKING 807 tape deck	\$ 125
14th-to-38th Awards 25 NORELCO "Carry-Corder" recorders	\$ 100 each
39th Award—MARTEL tape recorder	\$ 60
40th-to-51st Awards 12 TELEX Serenata stereo headphones	\$ 60 each
52nd to 63rd Awards 12 KOSS "PRO" stereo headphones	\$ 45 each
64th to 75 th Awards 25 CONCORD F-85 portable recorders	\$ 40 each
76th to 88th Awards 12 KOSS SP3 stereo headphones ..	\$ 25 each
89th to 100 Awards 12 TELEX Adjustatone stereo headphones	\$15.95 each
101 to 150th Awards 50 CAPITOL pre-recorded tapes	\$ 8 each
151 to 200 Awards 50 RCA pre-recorded tapes	\$ 8 each
201 to 250th Awards 50 REPRISE pre-recorded tapes ...	\$ 6 each
251 to 350th Awards 100 7" Reels AUDIO DEVICES 1251—High Performance recording tape	\$ 3.50 each



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- Recording from Records
- Superimposing
- Recording from Tape
- Recording from FM
- How to Splice
- How to Edit
- Forward and Reverse Sound
- Storage of Tape

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If you now own, or plan to buy, a tape recorder of any make, be sure to order this book now. The dollar you spend will be more than repaid in the extra pleasure you'll get whenever you use your tape recording equipment.

SEE YOUR HI-FI DEALER or SEND IN THIS HANDY COUPON TODAY!

Elpa Marketing Industries, Inc. Dept. 123TR6
New Hyde Park, N. Y.

Enclosed is \$_____ Please send me _____
copies of YOUR TAPE RECORDER (postage paid)

Name _____
(please print)

Address _____

City/State _____ Zip _____
Code _____

Circle 30 on Reader's Service Card

TAPE NOTES

(Continued from page 8)

We should note that, while we were concerned primarily with the R-200-B's SW circuits, we found ourselves pulling in WBMI in Meriden, Conn., some 100 miles away, on the FM band—with the aid of a rooftop antenna.

Whether the Fisher tuner is a special case, or whether there will be a rash of short wave-equipped tuners and receivers remains to be seen. Even Fisher president Avery Fisher isn't predicting additional models until "we see how this one does." He says it was designed primarily for Fisher's European customers, who have been demanding a component-quality SW-FM tuner. It was decided to put the unit on the domestic market as an experiment. It's likely that Fisher will face competition from at least one additional manufacturer when Tandberg of America releases the Swedish-made Huldra AM-FM-SW receiver. Prices on the Huldra weren't available at press time, but U.S. Tandberg president Eric Darmstetter pointed out that his unit, unlike the Fisher, would include an amplifier.

CLASSIFIED

Rates: Commercial ads 30¢ per word. Minimum order \$5.00. Swaps 15¢ per word. Minimum order \$2.50. Copy must be accompanied by remittance in full.

FREE HYPNOTISM, SELF-HYPNOSIS, Sleep-Learning Catalog of Tapes, Records, Books! Drawer TR400, Ruidoso, New Mexico 88345.

SLEEP-LEARNING . . . HYPNOTISM . . . by recorder! Astonishing details, strange tape, equipment catalog free! Autosuggestion, Box 24-TR, Olympia, Washington.

NO RED TAPE—learn to play the guitar the easy way, Flamenco Blues, Finger Picking, Rolf Cahn Guitar Tape Lessons. For free catalogue write: Inverness Publications, 977B Clayton Street, San Francisco, California 94117.

FOR SALE

REELS 7", New Boxed. 20 for \$5.00. Check with order. Joel Charles, 5239 Chestnut, Philadelphia 19139.

"CHRISTIAN TAPE LIBRARY." Many Gospel songs. Organ music and Gospel sermons. All tapes in mono only. Write to: Samuel G. Fry, Box 500, Selingsgrove, Pa. 17870

Used Mylar Tapes—Minimum order 10 reels. 1800'—\$1.00 each. 1200'—70¢ each. Send check with order. B. Freeman, 800 West 87th Street, Kansas City, Mo. 64114

TAPE CLUB NEWS

(Continued from page 7)

cated at 1906 N. 87th St., Omaha, Nebr. 68114. . .NTN (National Tape Network) services tape recording clubs as well as tape buffs with news and photographs—acts as a central news source on tape recording topics. The address is P.O. Box 88382, Indianapolis, Ind. 46208. . .Catholic Tape Recorders, International, 4334 Maonan Dr., San Antonio, Tex. promotes contacts all over the world. . .American Tape Exchange has a monthly bulletin as well as tape network with contacts all over the U.S. Write American Tape Exchange, ATE 84, Chambers Dr., Marietta, Ga. 30062. . .The Friendly Tape Network, 544 Clarkson St., Denver, Colo. 80218, is a small club that encourages the use of tape recording for hobby, commercial and informative use. The FTN has facilities for tapesponding both nationally and internationally.

Remember, if your tape club provides services that you think are of interest to the readers of Tape Recording Magazine and to members of other clubs, write us and we'll let others know about you.

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Shopping for
a tape recorder?
Here's all
you need to know:

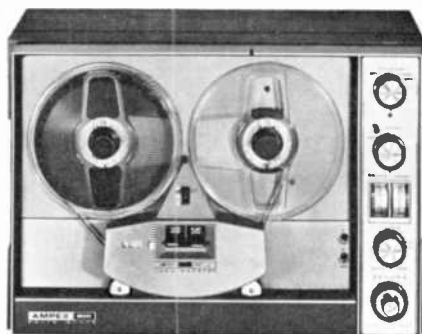
Ampex is the one professionals use!

It's a fact! 'Most all of the music you hear every day was originally recorded on Ampex tape equipment. And now, your nearby Ampex dealer can show you a full line to choose from for home use. Start with our lowest priced #860. Like all Ampex tape recorders, it features dual capstan drive and solid die-cast construction. It makes stereo and mono recordings, plays them back in shimmering high fidelity . . . and costs less than \$330, complete with detachable slide-on speakers. For just a little more,

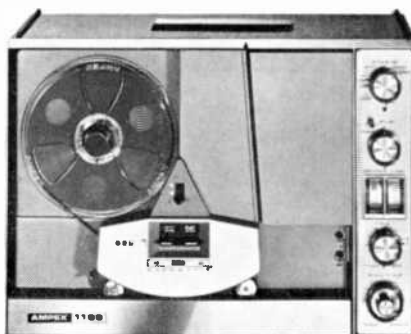
you can have our #1160, which is even easier to use; it has automatic threading and automatic reversing. (You don't have to switch reels to play the other tracks!) And, if you're a "nothing but the best" believer, believe us: you'll be more than happy with our # 2060. It offers sound quality on a par with professional equipment and power enough to thrill a small auditorium. To round out the picture, there's also a full line of accessories . . . all in the professional tradition of Ampex.

Special offer: Get \$50 in Stereotapes for just \$12.95! Ask your dealer.

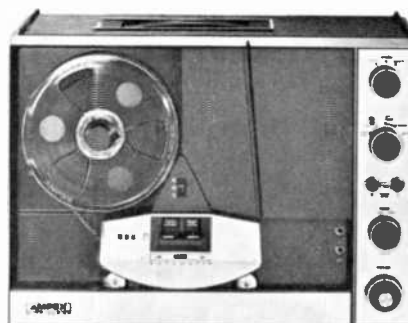
800 SERIES



1100 SERIES



2000 SERIES



tape recorders / speakers / microphones / headsets / blank tape / accessories / stereotapes

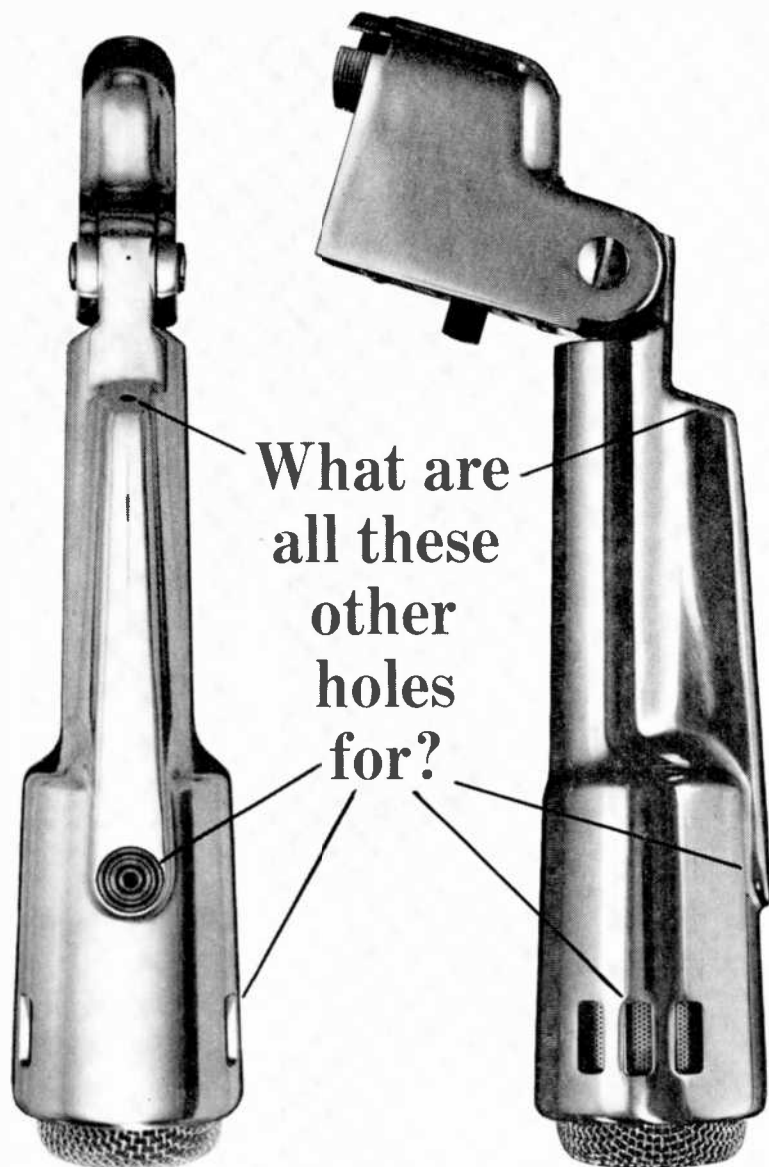
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ask anyone who knows

AMPEX

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If the
Electro-Voice
Model 664
picks up
sound here...



What are
all these
other
holes
for?

(EY) The holes in the top, sides and rear of the Electro-Voice Model 664 make it one of the finest dynamic cardioid microphones you can buy. These holes reduce sound pickup at the sides, and practically cancel sound arriving from the rear. Only an Electro-Voice Variable-D[®] microphone has them.

Behind the slots on each side is a tiny acoustic "window" that leads directly to the back of the 664 Acoustalloy[®] diaphragm. The route is short, small, and designed to let only highs get through. The path is so arranged that when highs from the back of the 664 arrive, they are cut in loudness by almost 20 db. Highs arriving from the front aren't affected. Why two "windows"? So that sound rejection is uniform and symmetrical regardless of microphone placement.

The hole on top is for the mid-range. It works the same, but with a longer path and added filters to affect only the mid-frequencies. And near the rear is another hole for the lows,

with an even longer path and more filtering that delays only the bass sounds, again providing almost 20 db of cancellation of sounds arriving from the rear. This "three-way" system of ports insures that the cancellation of sound from the back is just as uniform as the pickup of sound from the front—without any loss of sensitivity. The result is uniform cardioid effectiveness at every frequency for outstanding noise and feedback control.

Most other cardioid-type microphones have a single cancellation port for all frequencies. At best, this is a compromise, and indeed, many of these "single-hole" cardioids are actually omnidirectional at one frequency or another!

In addition to high sensitivity to shock and wind noises, single-port cardioid microphones also suffer from proximity effect. As you get ultra-close, bass response rises. There's nothing you can do about this varying bass response — except use a Variable-D

microphone with multi-port design* that eliminates this problem completely.

Because it works better, the E-V 664 Dynamic Cardioid is one of the most popular directional microphones on the market. It has both high and low impedance outputs available at the plug. Frequency range is peak-free from 40 to 15,000 Hz (cps). Output is —58 db. To learn more about Variable-D microphones, write for our free booklet, "The Directional Microphone Story." Then see and try the E-V 664 at your nearby Electro-Voice microphone headquarters. Just \$85.00 in satin chrome or non-reflecting gray, or \$90.00 in gold finish (list prices less normal trade discounts).

*Pat. No. 3,115,207

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