

# TAPE TODAY

## Reel-to-Reel, Cartridge, or Cassette?

by IVAN BERGER

**L**ots of people want to listen to tape, but nobody really wants to thread it.

That's why tape recordings in little drop-in boxes—cassettes, eight-track and four-track cartridges—are out-selling open-reel recordings by nearly twenty to one. Nobody contests that open-reel tapes have much better fidelity. But tape threading is too much of a chore. Even rabid audio perfectionists are fiddling around with portable cassettes or automobile cartridge players as supplements to their main listening systems.

The question, then, is which plastic box best merits fiddling with?

Endless-loop cartridges—four-track and eight-track—are the most established. Each contains a single reel of tape, from whose inside edge the tape is drawn, and to whose outside edge the tape returns after playing. The tape is the standard quarter-inch width, moving at  $3\frac{3}{4}$  inches per second.

The basic difference between these two cartridge systems is in their track arrangement. The four-track cartridge has two stereo pairs of tracks: after playing the first half of the tape (on tracks one and three), the head shifts (or is shifted manually) to play the second half on tracks two and four. The tracks are all recorded in the same direction, unlike those on open-reel tapes. The eight-track cartridge is similar, but with four pairs, each lasting half as long; the head first plays tracks one and five, then two and six, and so on. In either system, the tape repeats itself continuously until stopped. Four-track cartridges can hold up to forty minutes worth of tape, eight-track cartridges up to eighty minutes; of course, the four-track and eight-track versions of the same album will have the same running times.

The endless-loop cartridges were developed as playback systems for the car, because of their simple operation. Push a cartridge into the slot, and play begins, continuing indefinitely until you shut the player off by withdrawing the cartridge.

There are also players for the home, (many incorporated into other components), as well as some recorders. But

the cartridge systems, even in their home incarnations, pose severe problems for the serious music listener.

One of these problems is that all tracks must be of virtually identical length, so that track-shifting often occurs at intervals that don't accord with the divisions of the music.

Another is that few cartridge players have fast forward capability and none has rewind (though Lear-Jet is working on a rewind system now). Thus, if you stop playing a symphony in mid-movement, you must begin that symphony in mid-movement next time you play it.

As to fidelity, neither offers quite as good results as  $3\frac{3}{4}$  inch open-reel tapes (which, in theory, the four-track cartridge should be able to), with somewhat limited frequency response, rather high, though not intolerable, hiss, and too much wow and flutter for piano music, though it's usually tolerable on other recordings. The eight-track system also seems to be a bit more susceptible to crosstalk.

Though the four-track, or fidelipac system, is older, the eight-track (Lear-Jet) system is the one available as original equipment in Detroit cars, and, as a result, it's far more popular (estimated tape sales this year will be \$280-million for eight-track, \$35-million for four-track). The best selection of recordings, will probably, therefore, be found on eight-track, especially in years to come. And for the widest selection, you can get players compatible with both systems—or buy the under-\$5 "Gidget" made by Automatic Radio, which lets you play four-track recordings on eight-track machines. Four-track cartridges and equipment on the

average seem to be a little less expensive than eight-track.

Cassettes are a totally different breed. There are two hubs in each cassette; when the tape has been wound from one to the other, you flip the cassette over (or, in some newer machines, reverse the tape), and wind the tape back onto the hub it came from. The tape is only  $1\frac{1}{7}$  inch wide, and runs at  $1\frac{1}{8}$  ips, half the speed of the endless-loop cartridge.

The cassette's tracks run in two directions, unlike those of the cartridge systems, but like those of open-reel recordings. However, these tracks are not interleaved (as they are in cartridges and open-reels): instead of recording a stereo channel pair on alternating tracks, the cassette system records them on adjacent ones. That way, a monophonic head can scan both stereo tracks at once.

As a result, the cassette system has perfect mono-stereo compatibility. Monophonic cassette players pick up both channels of a stereo cassette recording, while both channels of a stereo player will pick up a monophonic recording. There are other ingenious aspects to the cassette system. Molded into the back of each cassette are two cavities, covered by plastic tabs. Break them off, and a sensing peg in the recorder will lock the machine out of "record" mode until you substitute another cassette—or tape the holes up. Thus, any cassette tapes you find worth keeping permanently are easily protected against accidental re-recording and erasure. Commercial cassette recordings, of course, have their tabs removed at the factory.

Mechanically, cassettes share few



This adapter channels the output of a cassette recorder (or radio) through an automobile's 8-track cartridge player.

disadvantages of the cartridge systems. It is possible, on cassettes, to leave a long blank passage at the beginning of the first "side" or the end of the second, to locate the break between sides at a convenient point in the music. Moreover, virtually all cassette machines have both fast forward and rewind capability (the only exceptions are the least expensive portable and automobile players).

As to fidelity, cassettes shouldn't sound as good as cartridges—they move at half speed, and their tracks are narrower. But in reality, cassettes sound a trifle better than most cartridges, with frequency response to about 10,000 Hz, and signal-to-noise ratios of 45 db or better. Hiss, distortion, wow, and flutter are still problems—but not intolerable ones. Even better quality is possible—3M's Revere cartridge system of the middle Sixties performed nearly as well as disc recordings, and the latest cassette recordings from Deutsche Grammophon aren't far behind.

Cassettes are considerably more compact than cartridges (four cassettes will fit into one cartridge box). And the cassette is definitely the most versatile instant-loading tape system. Nearly all cassette machines can record as well as play back—nearly all cartridge machines are playback only. There are portable recorders from pocket-sized mono machines to fairly hefty stereo ones, and portable players for under \$30. There are home recorders and players that take single cassettes, and others that take stacks of six. There are players for the car (soon to be available as original equipment on Mercedes-Benz), with push-in, rather than the usual drop-in loading. And there are cassette recorders built into a variety of other machines: electric organs, stereo receivers, portable radios, consoles and compacts.

There's a variety of cassette "software," too. Blank cassettes are now available in lengths of thirty minutes (fifteen per side), sixty minutes, ninety minutes, and one-hundred-twenty minutes; cassette recordings are now available in "micro" length, holding four popular tunes, as well as in standard album lengths.

There is absolutely no way to play a cartridge on a cassette machine. But Channel Marketing has announced the "Inmont Cass/8" adapter, which allows a cassette to play on eight-track cartridge units.

As to popularity, the cassette seems to be just hitting its stride: this year, for the first time, sales of cassette recordings have exceeded those of open reel and four-track tapes—though they're still only about a third as popular as eight-track cartridges.

## The Cassette and Its Content

ONCE IT SEEMED that every teen-ager walked down the street with a music machine held to his ear. The scene hasn't really changed, but the music machine is beginning to: instead of the ubiquitous "transistor," today it's often a cassette machine.

The cassette is a natural for kids: small, cheap (players are available for under \$30, and cassette recordings are getting competitive with LP records), portable. And it lets you hear your favorite album *right-this-second*, not just when some deejay (if they're still called that) chooses to play it. It even lets you hear songs radio won't play at all.

But wait. According to Jim Frye of Deutsche Grammophon/Polydor, the fastest-growing area of cassette sales is classical recordings. In fact, says Frye, in their cassette sales, DDG is, for the first time, realizing profit on chamber music.

Chamber music? You're not *supposed* to make a profit on chamber music. It's something you do for the good of the art and industry, a sort of gentleman's obligation, a way of retaining one's musical self-respect. Thus, chamber music's a freak market, anyway. Doesn't prove anything. "But," adds DGG's Lloyd Gelassen, "we're finding that classical releases generally do three times as well in the months following their release as cassettes than they did in the same number of months following their original release on discs." And this applies to recordings that have been available for quite some time on disc—so novelty is hardly the reason.

And this is just one sign of the revolution.

What revolution? Nobody really knows for sure—yet. Cassettes are popping up everywhere: in cars, in consoles, in portable recorders, compact systems, data-recording installations, telephone answering devices, electronic organs—and in radios.

And in the cassette/radio combination, says RCA Victor's Norman Racusin, lies the revolution—and the rub. "The very existence of the music industry itself will be in jeopardy," he told an industry convention last year, if vast numbers of people begin using tape cassettes to record music from radio broadcasts. "Our experience shows clearly that purchasers of tape recorders have never represented a significant market for recorded music. Cassette sales have been overwhelmingly of the blank variety."

But reports of the record industry's death have been exaggerated, according to Wybo Semmelink of North American Philips, originators of the cassette, and owners of a few record companies themselves. Within a week of Racusin's speech, Semmelink countered that the conflict was imaginary: "People are lazy and want their music pre-recorded."

And his predictions were for pre-recorded cassette sales of ten million units for 1968, against only six million blanks—not bad considering how little, comparatively, of the LP-record repertoire is available in cassette form.

To DGG's Frye, however, there is a revolution brewing in cassettes, and he's all for it. "The record industry, right now, is a failure," he claims. "Any industry with 200 million potential customers that gives a gold award for only a million-seller must be called a failure. If *Portnoy's Complaint* came out in paperback tomorrow, it would sell three million copies in three months. The few records ever to sell that many—the *Dr. Zhivago* album, for example—took years to do it."

Some of the reasons for that difference in sales are obviously beyond the cassette's reach: economics (a paperback of a best-seller usually costs between \$1.25 and \$2; cassette albums from \$3.95 to \$6.95), portability (cassettes—unlike books—need players, and even the smallest players are bigger than most paperbacks, and they lack sufficient sound quality for musical enjoyment), and privacy (you can read a book on a noisy subway train or in a quiet library).

But Frye points out one other difference the cassette *could* affect: distribution. "Walk back to your office from here," he told me, "and you'll pass at least a dozen places that sell paperbacks: drugstores, candy stores, subway stations, and so on. But how many record dealers will you pass?" (I counted: three.)

The cassette, then, could be the paperback of record retailing. Not because its cost is lower (though it might be, someday), but because it's easier to stock. In the compartment that my twenty-two Beethoven records fill to bursting, I can fit thirty-eight cassettes; both records of my Ninth Symphony album could be recorded on a single, extra-length cassette. What's more, the cassette is an easier shape to merchandise. It fits in smaller racks, and on shelves of more convenient depth. Titles are easier to read along its thicker spine. And it's small enough to be sold from slightly modified cigarette machines. (Will the Surgeon General turn out to be the cassette's best friend?)

# The Tape Equipment Market

*Because of the impossibility of keeping in touch with all developments in this rapidly growing field and because many manufacturers responded incompletely (or not at all) to our survey, this table is not quite complete. Our estimate is that it covers about one-third to one-half of the recorders available between \$50 and \$100, about one-third to one-half of those between \$100 and \$250, and about nine-tenths of those selling for \$250 and above. Only those features we consider most helpful in arriving at a choice are listed; for complete details and specifications, see your dealer.*

## CASSETTE

All cassette players and recorders operate at a tape speed of 1½ inches per second; all have rewind and fast forward unless otherwise noted.

### PORTABLE RECORDERS, MONO

#### Over \$100

**Blaupunkt:** optional AC adapter. Special feature—automobile adapter available (\$29).  
**Sony (120):** internal AC adapter, ALC, 5 lbs. Special features—end-of-tape alarm, built-in condenser mike, tape counter.

#### \$50-\$100

**Aiwa (TP-745):** internal AC adapter, 4 lbs, ALC.  
**Aiwa (TP-728):** internal AC adapter, 4½ lbs, ALC. Special feature—cardioid mike.  
**Aiwa (TP-707PJ):** optional AC adapter, 3 lbs.  
**Allied Radio (1150):** internal AC adapter, 4 lbs, ALC.  
**Ampex (Micro 22):** external AC adapter, 5 lbs. Special feature—additional large speaker built into carrying case.  
**Ampex (Micro 24):** internal AC adapter, 5 lbs, defeatable ALC.  
**Ampex (Micro 14):** internal AC adapter, 7¾ lbs, defeatable ALC.  
**Arvin (28L09):** AC adapter, 5 lbs.  
**Arvin (20L11):** AC adapter, 3½ lbs.  
**Bell & Howell (295B):** optional AC adapter, 5 lbs, ALC.  
**Bell & Howell (2395):** internal AC adapter, 3½ lbs.  
**Channel Master (6309):** internal AC adapter, defeatable ALC. Special feature—case holds four extra cassettes.  
**Channel Master (6307):** external AC adapter, 3¼ lbs.  
**Concord (F-98):** internal AC adapter, 8 lbs, defeatable ALC. Special features—case holds two extra cassettes, coiled mike cord, tape counter.  
**Crown (CTR-8750):** internal AC adapter.  
**General Electric (M8350):** internal AC adapter, 6¾ lbs, defeatable ALC. Special feature—hideaway mike with coiled cord.  
**Grundig (C200):** optional AC adapter, 5¼ lbs, ALC.  
**Hitachi (TRQ-260):** internal AC adapter, 6¼ lbs, ALC. Special feature—push-in loading.  
**Hitachi (TRQ-220):** internal AC adapter, 3½ lbs, ALC.  
**JVC Nivico (1620):** optional AC adapter, 3¾ lbs, ALC.  
**Keystone (800CR):** optional AC adapter, 3¼ lbs.  
**Magnavox (1V9019):** optional AC adapter, 6 lbs, ALC.

**Magnavox (1V9023):** AC adapter, 10 lbs, defeatable ALC.  
**Magnavox (IV9032):** AC adapter, 8 lbs, ALC.  
**Magnavox (2TC108):** optional AC adapter, 7 lbs, ALC.  
**Masterwork (M660):** AC adapter, defeatable ALC.  
**Norelco (150 Carry-Corder):** optional AC adapter, 3 lbs.  
**Panasonic (RQ-208S "Englewood"):** internal AC adapter, 7¼ lbs, variable ALC. Special feature—tape counter.  
**Panasonic (RQ-203S "Oakwood"):** internal AC adapter, 5½ lbs, ALC.  
**Radiant (Carissetter):** internal AC adapter, 3½ lbs, ALC. Special features—tape counter, cardioid mike.  
**Roberts (80):** internal AC adapter, 5¾ lbs, defeatable ALC. Special feature—tape counter.  
**Sony (80):** internal AC adapter, 4½ lbs. Special features—built-in condenser mike, end-of-tape alarm.  
**Sony (110):** internal AC adapter, 3¾ lbs, ALC. Special features—built-in condenser mike, end-of-tape alarm.  
**Sony (70):** internal AC adapter, 5 lbs, ALC. Special features—end-of-tape alarm.  
**3M-Wollensak (4300):** 7¾ lbs, defeatable ALC. Special feature—tape counter.

**3M-Wollensak (4200):** AC adapter, 4 lbs. Special feature—tape counter.  
**Zenith (A610 "Duet"):** internal AC adapter, 5¼ lbs, ALC.

#### Under \$50

There are literally hundreds of cassette recorders in this category, with only minor differences between them.

### POCKET-SIZED RECORDERS, MONO

#### Approximately \$100

**Aiwa (TP-726):** 1½ lbs, ALC. Special feature—no speaker, earphone outlet only.  
**Ampex (Micro 7):** optional AC adapter, 2¾ lbs, ALC.  
**Concord (F-101):** optional AC adapter, 2¾ lbs, variable ALC.  
**Panasonic (RQ-210S "Tiny Tone"):** optional AC adapter, 2¼ lbs, ALC.  
**Radiant (Microsetter):** optional AC adapter, 1¾ lbs, ALC. Special features—built-in and external mikes provided, tape counter.  
**Sony (TC-50):** optional AC adapter, 1¾ lbs, ALC. Special features—built-in mike, cardioid external mike optional.  
**Standard (SR-T111):** external AC adapter, 2 lbs, ALC.

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## Glossary and notes:

**ALC:** Automatic level control. Desirable for recording speech; for music, it should be equipped with an ALC defeat switch (i.e. on-off), or have variable action.

**AUTO-REVERSE METHODS** (in order of desirability):

- 1) sensing silent tape portions—will reverse automatically at silent end of any tape, but may also reverse in mid-play if by some rare coincidence all four channels are silent simultaneously.
- 2) 20-Hz signal—tape reverses when special 20-Hz signal passes over heads. Ampex recorded tapes have this signal already, and it can be recorded onto other tapes at will. May rarely cause accidental triggering on some deep organ notes.
- 3) 60-Hz signal—similar, but uses 60-Hz signal that must be recorded onto tape by user. More audible than 20-Hz, and possibly easier to trigger accidentally.
- 4) Foil strip—actuated by adhesive foil strip that must be fastened to tape by user. Foolproof, but time-consuming.

**AUTOMATIC TUNING (signal-seeking):** Radio dial automatically seeks out and tunes into next station on dial, when button is pressed.

**DECK:** Unit without amplifiers or speakers; must be plugged into external amp or sound system.

**DIN CONNECTION:** single plug (European type) for left and right line inputs and outputs; permits quick disconnection from external sound system.

**EIA:** Power rated at 5 per cent distortion.

**IHF:** Power at rated distortion (usually 1 per cent or less).

**INPBM:** Information Not Provided By Manufacturer.

**MAG PHONO INPUT:** Equalized input for magnetic phono cartridges; allows record changer to be plugged in directly.

**MOTORS:** More motors (up to three) mean faster rewinding, potentially greater durability.

**MIKE/LINE MIXING:** Separate controls for mike and line inputs; permit both to be recorded simultaneously, for voice-over-music and similar effects.

**MW:** Medium wave band.

**PLAYERS:** Machines that play back only, and do not record (all recorders also play back).

**RMS:** Average power, generally about one third lower than music power rating for the same amplifier.

**SPEEDS:** All open-reel machines have 7½ ips as fastest speed, unless otherwise specified. two-speed machines have 7½ and 3¾ ips; 3-speed machines, 7½, 3¾, and 1½; 4-speed machines also have 15/16 ips.

**SOUND-ON-SOUND:** Ability to transfer recording from one track to another while simultaneously adding new material (your own voice singing along, for instance) to the second track.

**W:** Watts of amplifier output (sum of both channels on stereo machines).

**WEIGHTS:** Listed only for items in portable cases. Check weights of battery portables closely: some manufacturers included weight of batteries, others didn't.



## PORTABLE RECORDERS, STEREO

### \$150-\$200

**Aiwa** (TP-1004): internal AC adapter, 8 lbs.  
**Concord** (F-400): internal AC adapter, 11 lbs, defeatable ALC. Special feature—tape counter.  
**Hitachi** (TRQ-222): internal AC adapter, 11½ lbs, ALC.  
**Sony** (124CS): internal AC adapter, 7 lbs, ALC.  
**Sony** (124): internal AC adapter, 5 lbs, ALC.

## PORTABLE CASSETTE PLAYERS, MONO

### Under \$35

**Aiwa** (TP-740): 2½ lbs.  
**Ampex** (Micro 1): 2½ lbs.  
**Arvin** (10L11-16): optional AC adapter, 3¼ lbs.  
**Bell & Howell** (292): optional AC adapter, 2 lbs.  
**Channel Master** (6301 "Band-Box"): optional AC adapter, 2½ lbs.  
**Hitachi** (TRQ-200): optional AC adapter, 2¾ lbs.  
**Keystone** (100CP): optional AC adapter, 2 lbs.  
**Zenith** (A602 "Nomad"): optional AC adapter, 3¼ lbs.

## AC-POWERED RECORDERS, STEREO

### \$200-\$300

**Aiwa** (TP-1018S): Special feature—automatic changer (plays six cassettes).  
**Aiwa** (TP-1018): Special features—automatic changer, speakers extra.  
**Ampex** (Micro 95): 20W output. Special feature—automatic changer.  
**Ampex** (Micro 87): 5W output, defeatable control. Special feature—mag phono input.  
**Ampex** (Micro 86): 20W output.  
**Ampex** (Micro 88): 20W output. Special features—in portable case, weighs 21 lbs.  
**Arvin** (30L71): 2W output. Special features—in portable case; 9¾ lbs.  
**Bell & Howell** (337): 20W output. Special feature—automatic changer.  
**Channel Master** (6320): Special feature—DIN connection.  
**Concertone** (216-3): INPBM.  
**Keystone** (200-CRS): INPBM.  
**Norelco** (2401): 8W output. Special features—automatic changer.  
**Norelco** (2401A): 8W output. Special features—automatic changer, speakers extra.  
**Sony** (130 Consolette): 15W output, ALC. Special feature—noise-suppressor switch.  
**3M-Wollensak** (4800): 16W EIA output.

### \$150-\$200

**Arvin** (30L71-12): 2W output. Special features—portable case, 5 lbs.  
**Lafayette** (RK-510): 10W output.  
**Masterwork** (M675): INPBM.  
**Panasonic** (RS-250S "Constellation"): 20W output. Special feature—mag phono input.

## AC-POWERED RECORDER DECKS, STEREO

### \$100-\$150

**Aiwa** (TP-10009): INPBM.  
**Ampex** (Micro 52): defeatable ALC. Special feature—mike and line input mixing.  
**Ampex** (Micro 50): INPBM.  
**Concertone** (406D): INPBM.  
**Fisher** (RC-70): Special features—automatic shut-off, optional wood base.  
**Harman-Kardon** (CAD-4): Special feature—automatic shut-off.

**JVC Nivico** (1624): INPBM.  
**Lafayette** (RK-550): INPBM.  
**Magnavox** (1K-8868): INPBM.  
**Panasonic** (RS-256US "Bridgeport"): Special feature—automatic shut-off.  
**Sony** (TC-125): ALC. Special feature—noise-suppressor switch.

### \$75-\$100

**Bell & Howell** (326): Special feature—mike and line input mixing.  
**Hitachi** (TRQ-242): INPBM.  
**Lafayette** (RK-760): Special features—mike and line input mixing, sound-on-sound.  
**Packard-Bell** (TRA-14): INPBM.  
**Roberts** (95): INPBM. Special feature—DIN connection.  
**Zenith** (A632): Special features—front-slot loading, no case (also available as #636W in case with storage for extra cassettes), available on Zenith consoles.

## AC-POWERED PLAYBACK DECKS, STEREO

### \$125-\$150

**Ampex** (Micro 90): automatic changer.  
**Bell & Howell** (332): automatic changer.  
**Norelco** (2502): automatic changer.

### \$50-\$75

**Ampex** (Micro 5): INPBM.  
**Bell & Howell** (322): INPBM.  
**Norelco** (2500): INPBM.  
**Zenith** (A634): INPBM.

## CASSETTE/RADIO RECEIVER COMBINATIONS, STEREO

### \$200-\$400

**Ampex** (Micro 87R): AM/FM, 50W output, defeatable ALC. Special feature—mag phono input.  
**Bell & Howell** (2399B): AM/FM, 20W output. Special feature—remote start/stop.  
**Bell & Howell** (2399A): AM/FM, 20W output. Special feature—remote start/stop.  
**Concord** (HES-55): AM/FM, 40W output. Special features—built-in Garrard record changer; remote start/stop control optional.  
**Concord** (HES-50): same as HES-55 less #CE-20 speakers.  
**Concord** (HES-35): AM/FM, 35W output. Special feature—remote start/stop control available (\$5).  
**Concord** (HES-30): AM/FM, 35W output.  
**Concord** (F-600): same as HES-30, in portable case, 30 lbs.  
**Panasonic** (RE-7080 "Danville"): AM/FM. Special features—signal-seeking automatic tuning, automatic shut-off.  
**Panasonic** (RS-280S "La Jolla"): AM/FM, 20W output. Special features—mag phono input, automatic shut-off.  
**Panasonic** (RE-7060 "Charleston"): AM/FM, 16W output.  
**Panasonic** (RS-252S "Orbitone"): AM/FM, 20W output. Special features—in black plastic, start/stop remote control (\$12).  
**H.H. Scott** (2560): AM/FM. Special feature—mag phono input.  
**H.H. Scott** (3610): AM/FM, 82W IHF output. Special features—mag phono input, speakers not supplied.  
**3M-Wollensak** (4850): AM/FM, 15W EIA output.

## PORTABLE CASSETTE/RADIO COMBINATIONS, MONO

### \$100-\$150

**Aiwa** (TPR-101): AM/FM/MW, 6 lbs, internal AC adapter. Special feature—cardioid mike.

**Ampex** (Micro 32): AM/FM, 9¾ lbs, defeatable ALC, optional AC adapter. Special features—optional 12V automobile adapter, tape counter.  
**Ampex** (Micro 30): AM/FM, 4¾ lbs, ALC, internal AC adapter.  
**Concord** (F-103 "Radiocorder"): AM/FM, 6¾ lbs, internal AC adapter.  
**JVC Nivico** (9400): AM/FM, 7¼ lbs, internal AC adapter.  
**Norelco** (RR-482): AM/FM, 4¾ lbs, ALC, internal AC adapter.  
**Panasonic** (RF-7270 "Royal-air"): AM/FM, 9 lbs, optional AC adapter. Special features—automobile bracket and 6-12V battery adapter \$25 extra.  
**Roberts** (530): AM/FM, 5½ lbs, internal AC adapter. Special feature—wood case.  
**3M-Wollensak** (4310): AM/FM, 7¾ lbs, defeatable ALC, internal AC adapter.

### \$75-\$100

**Aiwa** (TPR-104): FM only, 5 lbs, ALC, internal AC adapter. Special feature—cardioid mike.  
**Aiwa** (TPR-103): AM only, 5 lbs, ALC, internal AC adapter. Special feature—cardioid mike.  
**Arvin** (40L31-19): AM/FM, 6¼ lbs, internal AC adapter.  
**Bell & Howell** (298): AM/FM, 3¼ lbs, ALC, internal AC adapter. Special feature—"oscillator switch" to prevent AM interference.  
**Bell & Howell** (2398): AM/FM, 5½ lbs, ALC, internal AC adapter.  
**General Electric** (M-8500): AM/FM, 8 lbs, AC adapter.  
**Lafayette** (RK-160): AM/FM, 8 lbs, AC adapter.  
**Magnavox** (1V9024): AM/FM, 13 lbs, defeatable ALC, AC adapter.  
**Panasonic** (RQ-232S "Westwood"): AM/FM, 5 lbs, internal AC adapter.  
**Roberts** (525): AM/FM, 5½ lbs, ALC, internal AC adapter.  
**Zenith** (A-625 "Interlude"): AM/FM, 8 lbs, ALC, internal AC adapter.

### \$45-\$75

**Bell & Howell** (2396): AM only, 5¼ lbs, ALC, internal AC adapter.  
**Concord** (F-95 "Radio-corder"): AM only, 5 lbs, ALC, internal AC adapter.  
**Lafayette** (RK-95): AM/FM, 4 lbs, optional AC adapter (\$4).  
**Lafayette** (RK-90): AM only, 4 lbs, optional AC adapter (\$4).  
**Panasonic** (RQ-233S "Beachhaven"): AM only, 5½ lbs, AC adapter.

### \$35-\$45

**Aiwa** (TPR-111): AM only, 2½ lbs, playback only.  
**JVC Nivico** (9300): AM only, 3¾ lbs, playback only.

## CASSETTE EQUIPMENT FOR AUTOMOBILE USE

### \$100-\$200

**Aiwa** (TPR-2002): Special features—includes AM/FM radio, plays stereo (records mono only).  
**Aiwa** (TP-1022): Special features—plays stereo (records mono only).  
**Aiwa** (TR-1015): Special features—tape pops out at end of play; plays stereo (records mono only); remote start/stop switch on mike; coiled mike cord.  
**Aiwa** (TP-1023): Special features—tape pops out at end of play, stereo playback only.  
**Ampex** (Micro 42): Special features—tape pops out at end of play; plays stereo records mono; coiled mike cord; slide-

out tray holds mike and four cassettes.  
**Channel Master** (6316): Special features—plays stereo (records mono), ALC.  
**Panasonic** (RF-7270): Special features—monophonic recorder with built-in AM/FM radio, removable for portable use.  
**Sony** (TC-20): stereo playback only.

#### \$75-\$100

**Aiwa** (TP-1036): stereo playback only, no rewind or fast forward.  
**Ampex** (Micro 40): stereo playback only.

### REEL-TO-REEL

#### MONO PORTABLES

#### About \$700

**Tandberg** (11-1P): takes 7-inch reels with case open, 5-inch reel with case closed; 3 speeds; AC adapter optional (\$45). Special features—Pilotone motion picture synchronizer, line/microphone mixing, limiter with defeat switch, 3d-head monitor, 200-ohm Cannon-plug microphone input.  
**Uher** (1000 Pilot): 5-inch reel, 7½ ips, external AC adapter, defeatable ALC, 7½ lbs. Special features—Pilotone synchronizer, low-filter switch, 3d-head monitor.

#### \$200-\$300

**Sony** (800-B): 5-inch reel, 4 speeds, internal AC adapter, defeatable ALC, 11¼ lbs. Special features—built-in condenser mike plus remote cardioid mike, varispeed pitch control, tape lifters.  
**Tandberg** (11-2): 7-inch reel (case open), 5-inch reel (case closed), 3 speeds, optional AC adapter (\$45), defeatable ALC, 11½ lbs. Special features—line/mike mixing, optional 200-ohm Cannon microphone input.  
**Uher** (4000L): 5-inch reel, 4 speeds, external AC adapter, 7 lbs. Special features—cardioid microphone with voice/music switch, input selector switch, car battery connection, and many other accessories available.

#### \$75-\$150

**Aiwa** (TP-719): 7-inch reel, 2 speeds (1½ ips by capstan change), internal AC adapter, 16½ lbs. Special feature—car battery adapter available.  
**Aiwa** (TP-735): 5-inch reel, 7½ ips, internal AC adapter, 6 lbs.  
**Aiwa** (TP-713): 5-inch reel, 2 speeds, internal AC adapter, defeatable ALC.  
**Arvin** (57L19): 5-inch reel, 2 speeds, AC adapter, 10½ lbs.  
**Arvin** (70L54-12): 5-inch reel, 2 speeds, AC adapter, 12 lbs.  
**Channel Master** (6464 Keynoter): 5-inch reel, 2 speeds, internal AC adapter, 8½ lbs, ALC.  
**Hitachi** (TRQ-570): 5-inch reel, 2 speeds, internal AC adapter, 10 lbs, ALC. Special feature—microphone and line mixing.  
**JVC Nivico** (1541): 5-inch reel, 2 speeds, internal AC adapter, 7¼ lbs, ALC.  
**JVC Nivico** (1545): 5-inch reel, 2 speeds, internal AC adapter, 7¼ lbs, ALC.  
**JVC Nivico** (1561): 5-inch reel, 2 speeds, internal AC adapter, 7¼ lbs, defeatable ALC.  
**Magnavox** (1V-9011): 5-inch reel, 2 speeds, AC adapter, 14 lbs, defeatable ALC.  
**Panasonic** (RQ-501S "Bandleader"): 5-inch reel, 2 speeds, internal AC adapter, 7 lbs, defeatable ALC. Special feature—manual reverse.  
**Panasonic** (RQ-194S Vista): 5-inch reel, 2 speeds, internal AC adapter, 7 lbs, de-

featable ALC. Special feature—sound-on-sound.  
**Sony** (222-A): 5-inch reel, 2 speeds, internal AC adapter, 8¾ lbs, defeatable ALC.

#### \$25-\$75

**Aiwa** (TP-716): ¾-inch reel, ¾ & 1½ ips, internal AC adapter. Special feature—automobile adapter optional.  
**Aiwa** (TP-710): ¾-inch reel, ¾ & 1½ ips, internal AC adapter, 5 lbs, ALC.  
**Aiwa** (TP-714): ¾-inch reel, ¾ & 1½ ips, optional AC adapter.  
**Arvin** (87L08): 3-inch reel, ¾ ips, 6 lbs.  
**Hitachi** (TRQ-310): 3-inch reel, ¾ ips, AC adapter, 5¼ lbs, ALC. Special feature—mike/line mixing.  
**Hitachi** (TP-715): ¾-inch reel, ¾ & 1½ ips, optional AC adapter, 5 lbs.  
**JVC Nivico** (1351): 3-inch reel, ¾ & 1½ ips, internal AC adapter, 5¼ lbs, defeatable ALC.  
**Magnavox** (1V): ¾-inch reel, ¾ & 1½ ips, AC adapter, 8 lbs.  
**Magnavox** (TR-106): ¾-inch reel, ¾ & 1½ ips, optional AC adapter, 8 lbs.  
**Standard Radio** (SR-350): 3-inch reel, ¾ & 1½ ips, optional AC adapter, 5 lbs, ALC.

#### STEREO PORTABLES

#### \$750

**Sony** (770): 7-inch reel, 3 speeds, internal AC adapter, 24¼ lbs, defeatable ALC. Special features—deck, no amplifiers or speakers, 3d-head monitor, varispeed tuning, 4th head for 2-track playback, "SNR" noise reduction system, mike/line mixing, Cannon microphone inputs.

#### \$300-\$400

**Roberts** (610X): 5-inch reel (7-inch with adapter supplied), 4 speeds, external AC adapter, 13½ lbs, defeatable ALC. Special features—Crossfield bias, for extended range, DIN connector.  
**Uher** (4400): 5-inch reel, 4 speeds, external AC, 8 lbs. Special features—input selector switch, cardioid microphones, DIN connection. Auto battery adapter and many other accessories available.

#### \$100-\$200

**Aiwa** (TP1012): 7-inch reel, 2 speeds (+ 1½ ips with capstan adapter), internal AC adapter, 17¼ lbs. Special features—cardioid microphone, car battery adapter available.

#### MONO RECORDERS (AC ONLY)

#### \$250-\$400

**Tandberg** (1541): 3 speeds, 10W output. Special features—available as full-track or 2-track (Model 1521) mono, or 4-track; 4-track version allows 2 tracks to be played at once, line and mike mixing.  
**Tandberg** (1441 and 1421): ¾ & 1½ ips, 10W output. Special features—1421 is 2-track mono; 1441 is 4-track mono allowing 2 tracks to be played at once; line and mike mixing, teak case.  
**Uher** (5500): 5-inch reel, ¾ ips, 2W output, 16 lbs, defeatable ALC. Special feature—parallel-track for language instruction.  
**Uher** (Universal 5000): 5-inch reel, 3 speeds, 2W output, 16 lbs, defeatable ALC. Special features—for dictation and transcription: stop, start, and rewind controls on mike and optional remote control; record button on microphone.

#### \$70-\$150

**Aiwa** (TP-802): 2 speeds, 2½W output, 17¼ lbs.  
**Arvin** (86L38): 7½ ips, 44¼ lbs.  
**Hitachi** (TRQ710): 3 speeds, 2½W, 22 lbs, ALC. Special feature—sound-on-sound.  
**Lafayette** (RK-710A): 3 speeds, 1½W output, 14 lbs.  
**Panasonic** (RQ-706S Encore): 3 speeds, 4W output, 7½ lbs, defeatable ALC.  
**Sony** (105): 3 speeds, 10W output, 20¾ lbs, defeatable ALC. Special feature—cardioid mike.  
**Sony** (104-A): 3 speeds, 10W output, 20¾ lbs. Special feature—cardioid mike.

#### STEREO RECORDERS (AC ONLY) NON-REVERSING

#### \$300-\$550

**Aiwa** (TP-1006): 2 speeds (plus 1½ ips with capstan adapter), 35 lbs, 40W RMS output, 3d-head monitor, mixing, sound-on-sound. Special feature—mag phono input.  
**Ampex** (767): 2 speeds, 42 lbs, 16W RMS, 3d-head monitor, sound-on-sound, echo. Special feature—portable or walnut case.  
**NordMende** (800 1T): 3 speeds, 47 lbs, 6W RMS output, 3d-head monitor, 3 motors, variable ALC, mike/line mixing (6 inputs), sound-on-sound, echo. Special features—on-off key removable to prevent tampering, DIN connection.  
**Roberts** (770X SS): 3 speeds (plus 15 ips with optional adapter), 42 lbs, 40W output, hysteresis motor, mike/line mixing. Special features—crossfield biasing, tape cleaner, DIN connection.  
**Sony** (630): 3 speeds, 46¼ lbs, 40W IHF output, 3d-head monitor, sound-on-sound, echo. Special features—noise suppressor switch, cardioid microphones, mag phono inputs.  
**Sony** (540): 3 speeds, 41¼ lbs, 20W IHF output. Special features—noise suppressor switch, mag phono adapter available.  
**Tandberg** (1200X): 3 speeds, 20W output, monophonic mixing. Special features—mag phono input, DIN connection, crossfield biasing, teak or rosewood cases.  
**Telefunken** (Magnetophon 244U): 3 speeds, 28 lbs, 12W output, sound-on-sound.  
**3M-Wollensak** (6360): 3 speeds, 36W RMS (62W IHF) output, 3d-head monitor, 2 motors, line/mike mixing, sound-on-sound, echo. Special features—bias selector for regular or low-noise tapes, mag phono inputs.  
**3M-Wollensak** (6250): 3 speeds, 36W RMS (62W IHF) output, 3d-head monitor, 2 motors, mike/line mixing, sound-on-sound, echo. Special features—bias selector for regular or low-noise tapes, mag phono inputs.  
**Uher** (Royal 10,000): 4 speeds, 20W RMS output, 3d-head monitor, hysteresis motor, mike/line mixing, sound-on-sound, echo. Special features—built-in slide projector synchronizer. Interchangeable head blocks permit conversion to 2-track.  
**Viking** (880): 2 speed, 44 lbs, 10W IHF output, 3d-head monitor, 2 motors, sound-on-sound.

#### \$100-\$300

**Aiwa** (TRQ-737): 3 speeds, 10W, ALC.  
**Aiwa** (TP-1001): 2 speeds (plus 1½ ips with capstan adapter), 26½ lbs, 8W output.  
**Allied Radio** (TR-1040): 3 speeds, 32 lbs, mike/line mixing.  
**Ampex** (861): 2 speeds, 37 lbs, 12W RMS output.

(Continued on next page)

**Channel Master** (6324): 3 speeds, 8W output, sound-on-sound. Special feature—cardioid mikes.

**Channel Master** (6430 "Sir Realist"): 2 speeds, 28 lbs, 6W output. Special feature—cardioid mikes.

**Concertone** (4001): 3 speeds, 30 lbs, 8W output, 3d-head monitor.

**Grundig** (TK 247): 2 speeds, 30 lbs, 5W, variable ALC, sound-on-sound. Special feature—built-in tape cleaner.

**Hitachi** (TRQ-707): 3 speeds, 31 lbs, 5W output, ALC.

**Hitachi** (TRQ-717): 3 speeds, 25 lbs, 3W output.

**Lafayette** (RK-835): 3 speeds, 25 lbs, 8W output, sound-on-sound.

**Lafayette** (RK-825): 3 speeds, 20 lbs, 5W output.

**Magnavox** (1V9001): 4 speeds, 30 lbs, 6W output, sound-on-sound.

**Panasonic** (RS-761S La Scala): 3 speeds, 8W output, sound-on-sound.

**Panasonic** (RS-760S Band Wave): 3 speeds, 22 lbs, 8W output, sound-on-sound.

**RCA** (YZG570 Royale): 3 speeds, ALC.

**RCA** (YZG265 Masquerade): 3 speeds, ALC.

**Roberts** (1720): 2 speeds (plus 15 ips with optional adapter), 26 lbs, 12W RMS.

**Roberts** (1719): 2 speeds (plus 15 ips with optional adapter), 25 lbs, 12W RMS.

**Sony** (230 Compact): 3 speeds, 35½ lbs, 20W IHF output. Special features—mag phono inputs, noise-suppressor switch, cardioid mikes.

**Telefunken** (Magnetophon 207): 3 speeds.

**3M-Wollensak** (6300): 3 speeds, 22 lbs, 16W EIA output, 2 motors.

**3M-Wollensak** (6200): 3 speeds, 15 lbs, 16W. EIA output.

#### STEREO RECORDERS, AUTO-REVERSING

##### \$200-\$300

**Allied Radio** (TR-1080): 3 speeds, 40 lbs, auto-reverse by preset counter, 2-way recording, auto-repeat, sound-on-sound.

**Ampex** (2161): 3 speeds, 40 lbs, 12W RMS output. Auto-reverse by 20-Hz signal, 2-way record, auto-repeat, line/mike mixing, sound-on-sound. Special feature—automatic threading.

**Ampex** (1467): 3 speeds, 40 lbs, 16W RMS output, auto-reverse by 20-Hz signal, 2-way record, auto-repeat, 3d-head monitor, sound-on-sound, echo. Special feature—auto threading.

**Ampex** (1161): 3 speeds, 37 lbs, 12W RMS output, auto-reverse by 20-Hz signal, auto-repeat, hysteresis motor. Special feature—automatic threading.

**Hitachi** (TRQ-777): 3 speeds, 45½ lbs, 10W output, auto-reverse by foil strip, auto-repeat, defeatable ALC. Special feature—DIN connector.

**JVC Nivico** (1224): 3 speeds, 10W output, auto-repeat, sound-on-sound.

**Lafayette** (RK-960): 3 speeds, 44 lbs, 12W output, auto-reverse by foil strip, 2 motors, sound-on-sound.

**Panasonic** (RS-790S Console-Aire): 3 speeds 43 lbs, 20W output, auto-reverse by foil strip, 2-way record, sound-on-sound.

**Roberts** (420X): 3 speeds (plus 15 ips with optional adapter), 50W output, auto-reverse by counter preset. Auto-repeat, 3d-head monitor, defeatable ALC, mike/line mixing, sound-on-sound. Special features—optional remote control of all functions; cross-field biasing; light signals when heads are dirty; built-in tape cleaner; tape thickness adjustment.

**Sony** (560): 3 speeds, 50¼ lbs, 20W output, auto-reverse by detection of unrecorded

tape portion, 2-way record. Special features—noise-suppressor switch, variable speed pitch control optional, mag phono input, auto-battery adapter available.

**3M-Wollensak** (6360): 3 speeds, 25 lbs, 36W RMS output, does not include speakers.

##### Approximately \$700

**Ampex** (985A Music Center): AM/FM, 2 speeds, 12W RMS output, auto-reverse by 20-Hz signal, auto-repeat. Special features—auto threading, mag phono input.

**Panasonic** (RS-763S Interlude): AM/FM, 3 speeds, 32W output. Special feature—automatic tuning.

#### STEREO REEL/CARTRIDGE RECORDERS

##### \$350-\$450

**Roberts** (778X): records reels and 8-track cartridges, 3 speeds (plus 15 ips with optional adapter) on reel, ¾ and special 7½ ips dubbing speed on 8-track cartridges, 37½ lbs, 12W output. Special feature—crossfield bias for extended frequency range.

**Roberts** (1725-8L): similar to 778X, but 2-speed on reel, ¾ ips only on cartridge, 34 lbs, 4W RMS output.

#### STEREO DECKS, NON-REVERSING

##### \$400-\$750

**KLH** (Forty): 2 speeds, 3d-head monitor, mike/line mixing, sound-on-sound, echo, 3 motors. Special features—Dolby noise-reduction system (claimed signal-to-noise ratio 66-71 db); single master record level control for both channels; single VU meter reads louder of two channels automatically in stereo, can be switched to read either channel individually; bias/equalization switch for low-noise tape; foil-activated automatic rewind; internal oscillator for bias and Dolby system adjustments.

**Sony** (770): 3 speeds, 24¾ lbs, 3d-head monitor, mike/line mixing, sound-on-sound. Special features—built-in, rechargeable battery; low-impedance Cannon mike inputs; variable speed pitch adjust, SNR noise reduction switch; 4 heads (770-2 has 2-track record/play plus playback head for 4-track; 770-4 has 4-track record/play, 2-track playback from 4th head); limiter with defeat switch; automobile 12V adapter available.

**Sony** (650): 2 speeds, mike/line mixing, sound-on-sound, echo, 3 motors. Special features—plug-in heads allow easy conversion to 2-track; bias selector for low-noise tape; optional remote control (\$45) of all functions.

**Tandberg** (64X): 3 speeds, 3d-head monitor, sound-on-sound, echo, cross-field bias. Special features—FM multiplex filter, center-channel output, DIN connection, also available as 2-track 62X. Teak case, rosewood \$7.50 extra, portable case \$28.35 (total weight 23¼ lbs).

**Uher** (Royal 9500): 4 speeds, 27 lbs, 3d-head monitor, mike/line mixing, sound-on-sound, echo, 3 motors. Special features—interchangeable 2-track and 4-track head assemblies (optional), built-in slide synchronizer.

##### \$200-\$400

**Aiwa** (TP-1011): 3 speeds, 3d-head monitor, mike/line mixing, sound-on-sound. Special features—DIN connection, mag phono input.

**Ampex** (755A): 3 speeds, 3d-head monitor, sound-on-sound, echo.

**Concord** (Mark III): 3 speeds, 3d-head monitor, sound-on-sound, echo. Special feature—switchable hiss reducer.

**Concord** (Mark II): 3 speeds, 3d-head monitor, sound-on-sound, echo. Special features—built-in tape cleaner, hiss reducer.

**KLH** (Forty-one): 3 speeds, 3d-head monitor, sound-on-sound. Special features—Dolby noise-reduction system (claimed signal-to-noise ratio 66-68 db on standard tape), master record gain control for both channels.

**Panasonic** (RS-768US Templeton): 3 speeds, 3d-head monitor, mike/line mixing, sound-on-sound. Special feature—noise-suppressor switch.

**Sony** (630D): 3 speeds, 3d-head monitor, sound-on-sound, echo. Special features—noise-suppressor switch, mag phono adapter available, also 2-track version.

**Sony** (355): 3 speeds, 3d-head monitor, sound-on-sound. Special features—noise suppressor switch.

**Tandberg** (1600X): 3 speeds, cross-field bias. Special features—DIN connection, teak or walnut case (portable case: \$28.35; total weight, 19 lbs).

**TEAC** (A-1200U): 2 speeds, 3d-head monitor, line/mike mixing, sound-on-sound, echo, 3 motors.

**Telefunken** (Magnetophon 250): 3d-head monitor, sound-on-sound, echo. Special features—available in walnut or colors.

**3M-Wollensak** (6150): 3 speeds, 3d-head monitor, mike/line mixing, sound-on-sound, echo, 2 motors. Special features—bias selector for low-noise tape, mag phono input.

**Uher** (900L): 2 speeds, 3d-head monitor, sound-on-sound. Special feature—built-in tape cleaner.

**Viking** (433): 3 speeds, 3d-head monitor, mike/line mixing, sound-on-sound, echo, 3 motors.

**Viking** (88): 2 speeds, 3d-head monitor, sound-on-sound, 2 motors.

**Viking** (423): 3 speeds, 3 motors.

#### STEREO DECKS, AUTO-REVERSING

##### \$500-\$800

**Panasonic** (RS-1000S): 2 speeds, 55½ lbs, 3d-head monitor, mike/line mixing, sound-on-sound, echo. Special feature—optional remote control of all functions.

**Roberts** (420XD): 3 speeds (plus 15 ips with adapter supplied), auto-reverse by preset timer, 3 motors, defeatable ALC, 3d-head monitor, crossfield bias. Special features—optional remote control of all functions, built-in tape cleaner, light indicates when heads need cleaning, tension adjustment for different tape thicknesses.

**Sony** (700): 3 speeds, auto-reverse by detection of unrecorded tape portion, 2-way recording, auto-reverse, 3d-head monitor, mike/line mixing, sound-on-sound, echo. Special features—automatically skips blank leader of tape, variable speed pitch adjustment, bias selector for regular or low-noise tape, SNR noise-reduction switch, optional remote control of all functions (\$55).

**Sony** (666-D): 2 speeds, auto-reverse by detection of unrecorded tape, 2-way recording, 3 motors. Special feature—SNR noise reduction switch.

**TEAC** (A60104): 2 speeds, reversal by 60-Hz signal or metal foil, auto-repeat optional, 3 motors, 3d-head monitoring, mike/line mixing. Special features—interchangeable head assemblies for conversion to 2-track, 20-Hz sensing optional, pause control optional, tape-tension switch, DIN connection.



## \$200-\$500

**Ampex** (2150): 3 speeds, auto-reverse by 20-Hz signal, 2-way recording, auto-repeat, mike/line mixing.

**Ampex** (1455A): 3 speeds, auto-reverse by 20-Hz signal, auto-repeat, 3d-head monitor, sound-on-sound, echo. Special feature—auto threading.

**Astrocom-Marlux** (407): 2 speeds, auto-reverse by foil strip, 3d-head monitoring, mike/line mixing, sound-on-sound, echo. Special feature—tape-tension switch.

**Concord** (Mark IV): 3 speeds, auto-reverse on silent tape portions, 3d-head monitor, sound-on-sound, echo. Special feature—hiss suppressor.

**Lafayette** (RK-920): 3 speeds, 40 lbs, auto-reverse by foil strip, 2 motors, sound-on-sound.

**Magnavox** (1K8879): 3 speeds, auto-reverse by foil strip.

**Panasonic** (RS796US Symposium): 3 speeds, foil strip reverse, 2-way record, auto-repeat, sound-on-sound.

**Pioneer** (T-600): 2 speeds, foil strip reverse, 2-way recording.

**Sony** (560-D): 3 speeds, auto-reverse on silent tape portions, 2-way recording. Special features—noise-suppressor switch; varispeed pitch control; options include remote Varispeed; 12V converter for auto, sound-on-sound, mag phono input.

**TEAC** (A-4010SU): 2 speeds, foil strip reverse, 3 motors, monitor, mike/line mixing.

**TEAC** (A-1500U): 2 speed, foil strip reverse, 3 motors, 3d-head monitor, mike/line mixing, sound-on-sound, echo in walnut or portable case, 42 lbs.

## TAPE DECKS—PLAYBACK ONLY

### \$330

**TEAC** (A4000SU): 7½ ips, preamp output, 3 motors. Special features—automatic reverse (foil strip), converts to equivalent of 4010S recorder by adding optional RA-40 record amplifier.

### \$100-\$150

**Sony** (155): 3 speeds, preamp output.

**Tandberg** (65): 3 speeds, tape head output.

**Viking** (807): 2 speeds, tape head output. 3 motors.

## LARGE-REEL RECORDERS AND DECKS:

### Over \$1,000

**Crown** (SX824): 10½-inch reel, 2 speeds, 52-59 lbs, deck only, 3 motors, 3d-head monitor, mike/line mixing, sound-on-sound, echo. Special features—bias metering and adjustment, 15 ips optional, photo-cell auto-stop also permits auto-cueing, 2-track version (SX822) available, 4-channel version available at higher price.

**Magnecord** (1048-4X): 10½-inch reel, 2 speeds, 47-50 lbs, deck only, 3 motors, 3d-head monitor, mike/line mixing. Special features—optional 4th head (\$85).

### \$500-\$1,000

**Ferrograph** (700 series): 8¼-inch reels, 3 speeds, 3 motors, 3d-head monitor, mike/line mixing, sound-on-sound, echo. Special features—available as deck only, or with 20W stereo amp and speakers (in portable case, 50 lbs), variable-speed rewind / fast-forward, bias metering. Other options include 2-track stereo, monophonic, 15-7½-3¾ ips, low-impedance mike inputs.

**Magnecord** (1024): 8-inch reel, 2 speeds,

47 lbs, deck only, 3 motors, 3d-head monitor, mike/line mixing. Special features—optional 4th head, optional remote control for all functions.

**Magnecord** (1020): 8-inch reel, 2 speeds, 35 lbs, 3d-head monitor, mike/line mixing. Special feature—optional walnut base.

**ReVox** (A77): 10½-inch reel, 2 speeds (15 ips optional), 39 lbs, 3 motors, 3d-head monitor, mike/line mixing, sound-on-sound, echo. Special features—available with 16W RMS stereo amplifier and built-in speakers, without speakers, and as deck only.

**Tapesonic** (70-TRSQ): 10½-inch reel, 2 speeds (plus 15 ips with adapter supplied), 69 lbs, deck only, 3 motors, 3d-head monitor, mike/line mixing. Special features—optional remote control for all functions, low-impedance microphone inputs optional.

**TEAC** (A-7010): 10½-inch reel, 2 speeds, 62 lbs, deck only, 3 motors, 3d-head monitor, mike/line mixing. Special features—auto-reverse (60-Hz signal and foil sensing tab, 20-Hz sensing and auto-repeat optional), walnut case optional, optional remote control of all functions.

**TEAC** (A-7030): same as A-7010, but without auto-reverse. Special features—4th head for 2-track playback, foil-sensing auto rewind, DIN connection.

## EIGHT-TRACK CARTRIDGE

### AUTOMOBILE PLAYER/RECORDER

#### \$125-\$150

**Lear Jet** (A-260): records monaurally, plays stereo recordings in stereo, 8W RMS output.

### AUTOMOBILE PLAYBACK ONLY

#### \$100-\$225

**Lear Jet** (A-250): with AM/FM-stereo tuner, signal-seeking, fast-forward, 8W RMS output.

**Lear Jet** (A-130): with AM/FM-stereo tuner, 8W RMS output.

**Lear Jet** (A-240): with FM-stereo tuner, fast forward, 8W RMS output.

**Lear Jet** (A-230): with AM tuner, fast forward, 8W RMS output.

#### \$50-\$100

**Channel Master** (6200): 14W output.

**Hitachi** (Car Stereo CS-113): 5W output.

**Lear Jet** (A-220): fast forward, 8W RMS output.

**Lear Jet** (A-110): 8W RMS output.

**Lear Jet** (A-50): 8W RMS output.

### BATTERY-OPERATED PORTABLE EIGHT-TRACK PLAYERS

#### \$100-\$130

**Lear Jet** (P-560): includes AM/FM tuner (not stereo), plays stereo from cartridges, built-in AC converter, 12V input for automobile use.

**Weltron** (WMFT-103): includes AM/FM tuner (not stereo), plays stereo from cartridges, built-in AC converter; 12V input for automobile use.

#### \$30-\$80

**Lear Jet** (P-550): built-in AC converter, 12V automobile input.

**Lear Jet** (P-530): plays mono only, optional second speaker/amplifier unit converts to stereo, 12V input for car.

**Lear Jet** (P-510): Mono only.

### HOME PLAYER/RECORDERS

COMBINATION REEL/EIGHT-TRACK: (See "REEL/CARTRIDGE RECORDERS" page 54).

#### \$100-\$300

**JVC Nivico** (1250): deck, fast forward, DIN connection.

**Lear Jet** (H-360): with speakers, 26W output.

**Panasonic** (RS-820S Bainbridge): with AM/FM-stereo tuner, fast forward, 16W output.

**Sony** (TC-8): deck, ALC. Special feature—auto shut-off.

**Viking** (811-R): deck. Special features—logic circuits allow auto-stop at end of any track or tape or continuous playback.

### HOME PLAYERS, WITH SPEAKERS

#### \$100-\$300

**Channel Master** (6206): with AM/FM-stereo tuner, 8W RMS output.

**Hitachi** (TPQ-115): also usable as 14-watt amplifier.

**JVC Nivico** (9800/9810): with AM/FM-stereo tuner, 8W output.

**Keystone** (3800 SX): AM/FM-stereo tuner. **Lear Jet** (H-460): built-in record changer, AM/FM-stereo tuner, 12W output.

**Lear Jet** (H-410): similar to H-460, but without changer.

**Lear Jet** (H-340): 12W output.

**Lear Jet** (H-330): 12W output. Speakers built in, not detachable.

**Masterwork** (M8601): INPBM

**Panasonic** (RE-7070S Symphony 8): AM/FM-stereo tuner, 9W output.

**Panasonic** (RS-810S Music Master 8): 16W output.

**Viking** (811 series): 10W IHF output. 811-P in portable case, 811-W in walnut, 811-A in walnut without speakers.

### HOME PLAYBACK DECK

#### \$50-\$100

**Concord** (CP-250A)

**Heath** (GD-28): only 8-track player in kit form.

**Hitachi** (TPQ-114)

**JVC Nivico** (1100)

**Lear Jet** (H-310)

**Magnavox** (K0886)

**Packard-Bell** (TPA-6): also available uncased as TPAK-5.

**Panasonic** (RS-802US Collingswood)

**Panasonic** (RS-800AS Player 8)

**Standard Radio** (SR-78000P)

**Viking** (811)

**Zenith** (Z635W): has storage compartment for extra cartridges.

## FOUR-TRACK CARTRIDGE

### AUTOMOBILE

**Muntz Stereo-Pak** (M-35-69) \$50, 12W output.

### BATTERY PORTABLE

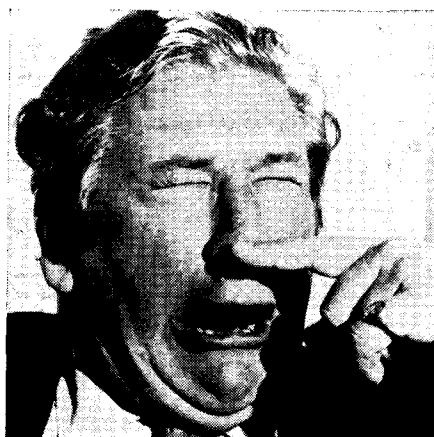
**Standard Radio** (SR-T183F): \$85, 2W output. Records stereo. Internal AC adapter, ALC.

**Standard Radio** (SR-T115): \$40, 1.5W output. Optional AC adapter.

### HOME RECORDER

**JVC Nivico** (9450): \$280, 20W output.

# Recordings in Review



Peter Ustinov—"the mighty sneeze . . . that validates the truth of everything he says."

## Kodály Plus Ustinov

KODALY: *Háry János*. György Melis (Háry/Napoleon), Margit László (Empress), Erzsébet Komlóssy (Orzse), Olga Szönyi (Marie-Louise), László Palocz (Marczi), and Zsolt Bende (Bombazine); with Edinburgh Festival Chorus; Wandsworth School Boys Choir; John Leach, cimbalom; Peter Ustinov, narrator; and István Kertész conducting the London Symphony Orchestra. London stereo, OSA 1278, \$11.96 (two discs).

AS THOSE WHO may have stumbled on Qualiton HLPX 1023-5 (in which Janos Ferencsik directed a complete Hungarian-language treatment of Kodály's celebrated stage work) are aware, *Háry János* is something more than a straightforward telling of the tales involving the legendary John Háry. It is Kodály's own kind of *Singspiel*, in which the orchestral interludes are surrounded by spoken text, vocal interpolations, choral numbers, etc. In any language this would be a formidable combination for export purposes; in Hungarian it is all but unthinkable.

However, in his career as a recording producer, Erik Smith has learned to think the unthinkable (such as a complete recording of Mozart's music for wind ensembles) and dare the undarable. This was good (if not ideal) preparation for this project, in which he undertakes to do the undoable: that is, to convert the above-listed elements into a mere *mélange* that would be internationally palatable.

He has, in some important respects, succeeded. Armed with the indispensable collaboration of Peter Ustinov as narrator, Smith has created a scenario

that certainly expands the familiar suite into something like a sequential stage work. János, as everyone knows, begins with the mighty sneeze that (according to local lore) validates the truth of everything he says, then goes on to recount the adventures that took him to Vienna in the entourage of the Empress, brought him into mortal and victorious conflict with Napoleon, eventually to return home with his village sweetheart. And Ustinov, with his polished pronunciation, his apt mimicry of voices, and his always evident feeling for music, performs it as the superb *conférencier* he is.

But is there really enough music in the score as here represented to sustain the attention through four sides? Is not the best music contained in the Suite? More particularly, is it conducive to an artistic whole to have the solo vocal and choral segments sung in Hungarian in rather mood-shattering alteration with the English narration? For my taste, the result cannot avoid being something of a hybrid.

All these objections fall into the area of individual preference, or the exercise of judgment. So it must be granted that there will be others who will feel otherwise. Certainly there can be nothing but admiration for the performance under Kertész, for he delivers the orchestral interludes with fine appreciation of their satirical character as well as blending the vocal elements skillfully into the total sequence. One link with the Qualiton version is present in the person of Melis, who is a suitably self-satisfied Háry János as well as a credible Napoleon. The gifted Komlóssy is admirably suited for the music of János's sweetheart Orzse, and the others do well what is required of them. As a recording, incidentally, the "Battle" music shows that London's technicians are continuously searching for ways to improve on their normally high standard—and frequently succeeding.

## The Versatility of Webster

RACHMANINOFF: *Etudes-Tableaux*, Opus 33, and Opus 39. Beveridge Webster, piano. Dover stereo, HCR-ST 7284, \$4.95. STRAVINSKY: *Petrouchka*, *Sonata*, *Serenade in A*, *Piano Rag*, *Circus Polka*, *Ragtime*, *The Five Fingers*, *Four Etudes*, and *Tango*. Webster, piano. Dover stereo, HCR-ST-7288-9, \$9.90. BERG: *Sonata Opus 1*. WEBERN: *Variations* (Op. 27). SCHOENBERG: *Piano Pieces* (Op. 11), *Pieces* (Op. 19), *Pieces* (Op. 23). Webster, piano. Dover stereo, HCR-ST 7285, \$4.95.

BEVERIDGE WEBSTER doesn't enjoy the public reputation of some pianists newer on the scene than he is, but it is hard to think of one—certainly none other of American birth—who could provide the repertory above with a very substantial part of what it needs, back to back with the Debussy cycle he gave last season in commemoration of the fiftieth anniversary of the composer's death. As he began his American career in the Thirties as something of a Beethoven specialist, it is evident that he has not only a wide range of sympathies, but also a wide range of the qualities required to do them justice.

Perhaps the most surprising extension both of sympathies and qualities is embodied in the Rachmaninoff *Etudes-Tableaux*. They are infrequently heard today, and Webster's disc is the single one currently available on which they appear in toto. But to those who had the good fortune to hear the composer in recital, this will be an old experience re-created rather than a new one: for a set from one opus or the other was a common occurrence on a Rachmaninoff program. Webster has the required pianistic power not only at hand, but under control; he senses the underlying drama and brooding passion of the music in their true proportions and colors.

In his treatment of the broad range of Stravinsky's piano music and representative examples of the three Viennese composers, Webster bears witness to the thesis of such a performer as Clara Schumann that to be a pianist is to play the repertory of the piano. In other words, the specialist may have his place, but agile fingers, a disciplined mind, and a strong sense of rhythm are keys to open almost any combination of musical values.

## Sills in Paris

MASSENET: "Je marche sur tous les chemins," Fabliau: "Oui, dans les



Beveridge Webster—"an old experience re-created. . . ."