

Yamaha TC-800GL Cassette Recorder



General Description: The new Yamaha TC-800GL is an unusually, and excellently, designed cassette recorder that combines some very useful features with high performance. It is essentially a top-loading unit, but when installed, a support flap on the underside tilts the deck forward so that the convenience advantage of the front-loading design is, to a great extent, realized. This slant design also relates to the styling of the control panel which is a series of steps, each step containing another control function. When set up, the TC-800GL looks attractive and inviting, with a functional logic to its layout that is a tribute to the talent of its designer, one Mario Bellini.

The Yamaha is a cassette deck that you can operate on regular AC line voltage, or from an external 12-volt DC source, or from a self-contained (internal) battery source consisting of nine "C" cells. It thus can serve as an indoor (home, studio, etc.) unit, as a vehicular unit, or as an on-location portable—and as far as MR's tests could determine—with no compromise in performance as a result of this versatility.

The TC-800GL also has a variable pitch control—so far as MR can determine, the only cassette deck other than the two top Nakamichi models (the 700 and the 1000) to sport such a control. It has no effect during recording, but it may be used on playback to vary musical pitch by ± 3 percent, and thereby match the recorded sound precisely to the pitch or tempo of a "sing-along" or "play-along" activity.

A Dolby-B circuit is built in, plus the option for using chrome or standard low-noise tapes. The selector switch need not be used when inserting a chrome-tape cassette that has the extra hole along its rear edge, since a sensor on the Yamaha will readjust the bias automatically. Input arrangements and controls permit mixing of microphone and line signals. The unit has a memory rewind, a built-in limiter option, and it may be started and stopped by an external timer.

The cassette well is at the left, and its cover has a transparent section that permits you to observe tape motion and the amount of tape on both supply and take-up hubs. Below this section are seven push-buttons for: eject, stop, fast reverse, normal forward, fast forward, record (colored red), and pause. The righthand portion contains the novel "stepped" arrangement mentioned. At the very top is the meter panel. There are two amply proportioned VU meters,

each calibrated from -40 to +6. Each meter has its own peak-level indicator. The meters, by the way, function on both recording and playback. Centered between the two meters are two printed legends that light up accordingly to show "RECORD" mode and "DOLBY." The right meter doubles as a battery check indicator at the press of a button below it. Next to this little button is a switch to control the lighting of the meter panels in battery or external 12-volt DC operation—a nice touch in the interest of conserving power. To the left of these two buttons is a three-digit tape index counter and its reset button.

The next step below contains the controls for memory, limiter, Dolby noise-reduction, tape-type selection, and power off/on. A step below this introduces the pitch control; the next step down contains playback level controls; a step lower contains the input controls for microphones; the bottom step contains the line input controls. Pitch and signal level controls are all sliders that move over numbered scales to indicate relative degrees of increase or decrease. The level sliders are arranged in stereo pairs with each channel marked; their positioning permits using either in a pair separately or both simultaneously. The level is increased as a slider is moved from left to right.

The underside of the TC-800GL, which is raised when the supporting flap is used, contains the standard connectors for the AC power cord, and line signals in and out. There's also a lid to get at the battery compartment. Input jacks for microphones are on the left side of the unit, in a group that also includes a headphone output jack, and a socket for running a cable from an external 12-volt DC source.

The Yamaha unit comes in a self-contained, very dark gray high-impact case. The owner's manual is a 26-page booklet that contains, in addition to full instructions for using the deck, useful advice on recording—including material on microphones, mixing and so on, maintenance, and recommended tapes by brand and number.

Test Results: In testing the Yamaha TC 800GL, MR ran critical tests twice, using both a standard low-noise tape (Maxwell UD-XL-60), and a chrome tape (TDK-KR-C60). Both of these are among the tapes recommended in the owner's manual. The results, in sum, confirm the published specs for the unit and add

up to a better-than-average cassette recorder. Best high-end response was obtained, of course, using the chrome tape—which also improved the recorder's S/N ratio. With either low-noise or chrome tape, the use of the built-in Dolby system also improved S/N. Distortion in general was very low; mechanical wow and flutter were astonishingly low.

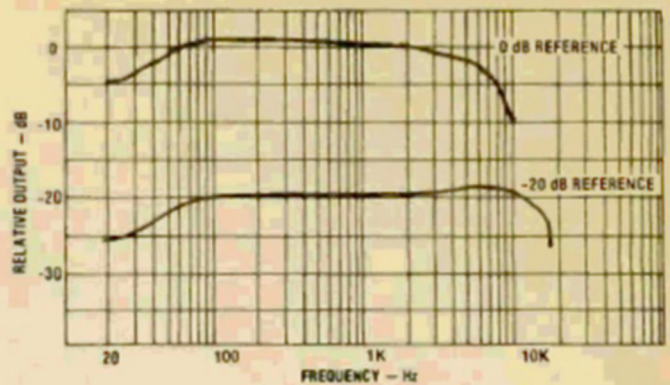
For optimum results, MR recommends using chrome tape with the Dolby on. In this mode, frequency response runs within ± 3 dB from 40 Hz to 15,000 Hz. Distortion at zero VU was 1.2 percent, rising by a mere 0.01 percent at +3 VU. Wow and flutter remained well down at only 0.04%; signal-to-noise was an estimable 67 dB, which makes the Yamaha one of the quietest-running tape machines of any format presently available.

The Dolby circuitry was found to be accurately calibrated, and the recording set-up provides ample headroom for strong signals. The meters are correct too, and serve more than cosmetic purposes in judging input levels. Loading a cassette is foolproof in that there is no need to place the cassette "just so" in order to have it engage and run. Microphone and headphone jacks are standard size ($\frac{1}{4}$ -inch) as opposed to the mini-jacks often found on compact recorders, and their location makes them readily accessible. All controls operated smoothly and did their intended chores.

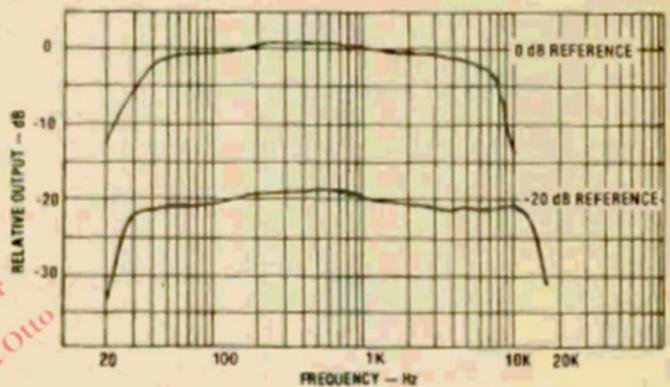
General Info: Dimensions are $12\frac{1}{16}$ inches wide and $12\frac{1}{16}$ inches deep. The height of the Yamaha varies, as per its slope, from $6\frac{1}{4}$ inches to just under 1 inch. Weight is 11 pounds (without batteries). Price: \$390. Owner's manual is excellent.

Individual comment by L.F.: I am impressed with a cassette recorder that performs well indoors and that also can be taken into the field to produce quality results. I also feel that this is the first machine that presents its operating and control panel to the user at the most ideal angle. However, I found it difficult to get used to the slider controls that increase the gain when moved from right to left. Frequency response, while very good, did not seem outstanding for a machine in this price class.

Individual Comment by N.E.: I agree with L.F.'s comments regarding the indoor/outdoor quality and dependability of the Yamaha TC-800GL. Ditto for his preferring the sloping panel—it makes the unit one that you can install just about anywhere and still have good access to it. As for the sliders moving from right to left, this feature did not bother me at all (maybe it's because I am somewhat ambidextrous). The frequency response certainly is in the ball park for a cassette machine and is nothing at all to question in light of the unit's low distortion and very favorable S/N ratio. A clean high end to 15,000 Hz is, to paraphrase our own report in the last issue, always preferable to a "dirty" high end beyond that mark.



Yamaha TC-800GL: Record/playback response, using TDK-KR-C60 tape (chrome).



Yamaha TC-800GL: Record/playback response, using Maxell UD-XL-C60 cassette tape (standard low-noise).

YAMAHA TC-800GL CASSETTE RECORDER: Vital Statistics

PERFORMANCE CHARACTERISTIC	LAB MEASUREMENT
Using chrome tape:	
Record/playback frequency response, -20 dB	± 3 dB, 40 Hz to 15 kHz
Harmonic distortion, -10 VU (ref. 1 kHz)	
0 VU	1.5%
+3 VU	1.2%
S/N ratio, Dolby off	59 dB
Dolby on	67 dB
Using standard low-noise tape:	
Record/playback frequency response, -20 VU	± 3 dB, 30 Hz to 13,500 Hz
Harmonic distortion	
-10 VU	1.5%
0 VU	1.2%
+3 VU	1.3%
S/N ratio, Dolby off	56 dB
Dolby on	64 dB
Input sensitivity, microphone	0.5 mV
line level	41.0 mV
Output signal level, line	430.0 mV
headphone	1.0 mW/8 ohms
Flutter and wow (combined WRMS)	0.04%
Fast wind time, C-60 cassette	50 seconds

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