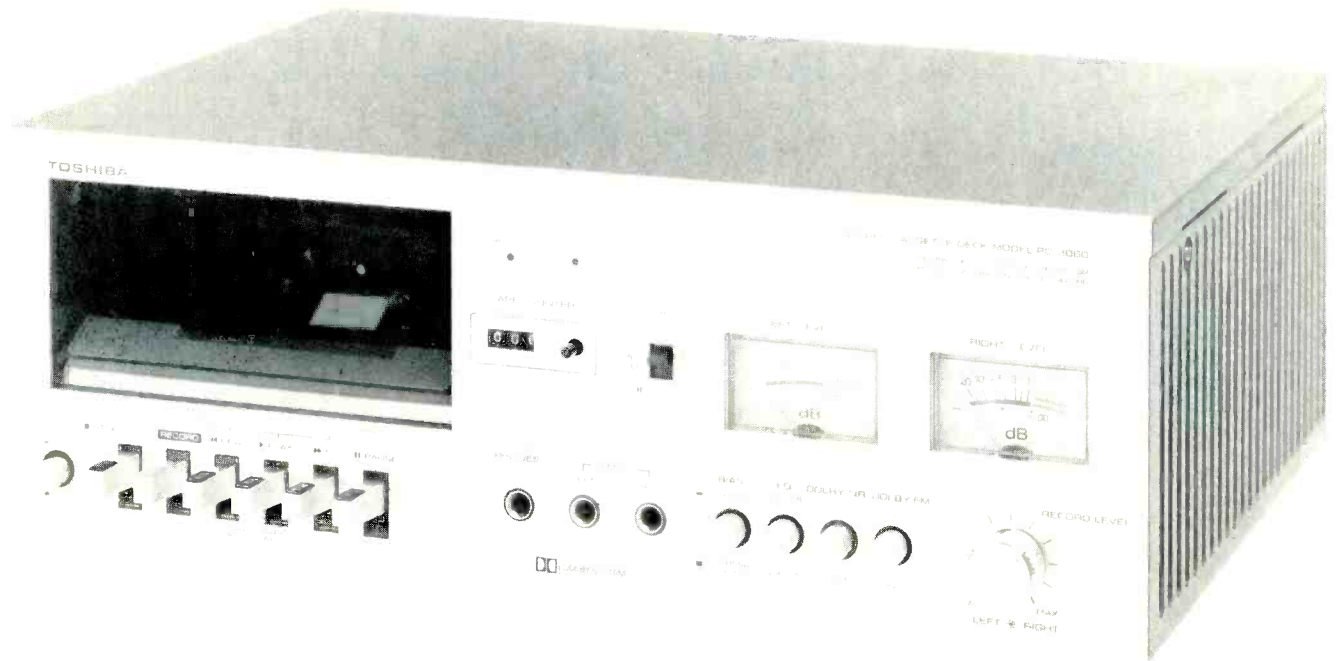


## Toshiba Model PC-3060 Cassette Deck



### MANUFACTURER'S SPECIFICATIONS

**Wow & Flutter:** 0.09 per cent W rms.  
**S/N:** 55 dB "A" weighting without Dolby.

**Distortion:** 3 per cent.  
**Output:** 400 mV @ 50 kilohms.  
**Frequency Response:** 40 Hz to 15 kHz with CrO<sub>2</sub> tape.

**Dimensions:** 15¼ in. (40 cm) W x 5½ in. (14 cm) H x 11½ in. (29.2 cm) D.  
**Weight:** 10½ lbs. (4.8 kg).  
**Price:** \$199.95.

82

A cassette deck for less than \$200.00 with a Dolby system and a nicely styled front loader is an excellent value for the money... but when it also features a timer switch, provisions for three different kinds of tapes, and a Dolby FM switch, then it has to be a real bargain. And to top it off, the basic performance of the Toshiba PC-3060 is comparable with decks costing much more. The deck looks conventional enough with its brushed aluminum panel, instrument type knobs, and black metal cover. The tape compartment is on the left and the cassette is placed at an angle where it can easily be seen. Depressing the *Eject* lever causes the transparent cover to lift up and the cassette is pushed out very gently. The plastic cover can also be opened manually if desired.

Underneath there is the usual row of tape control levers, and next to these are the headphone and microphone sockets (standard ¼ inch). Above these is a digital counter and two tiny indicator lights for *Dolby* and *Record* with the timer switch. Just underneath these two VU meters are a group of four pushbuttons: the first two are for the selection of bias and equalization, the third is the Dolby switch, and the fourth

is depressed when you record from FM using the Dolby system. On the extreme right is a dual-rotary control and at the extreme left is a pushbutton *On/Off* switch.

The standard RCA-type input and output sockets are located in a small recess at the rear of the unit, and just above them are the Dolby calibration controls with the 25 and 75  $\mu$ S de-emphasis switch. The separate bias and equalization switches allow Ferric Oxide, CrO<sub>2</sub>, and Ferrichrome tapes to be used. There is also a timer switch that will permit the deck to be switched on via the timer in either the *Record* or *Playback* mode. The motor is a d.c. servo type, fed from a 12 V supply, and the majority of components are mounted on one large circuit board. There is a total of 20 transistors and eight ICs.

### Measurements

Figure 1 shows the playback response from a standard test tape, and Fig. 2 shows the Record/Replay response at 0 and -20 VU using Maxell UD tape. The 3-dB-down point was at 14.5 kHz, and it will be seen that the output shows a slight rise

Fig. 1—Playback response from a standard test tape.

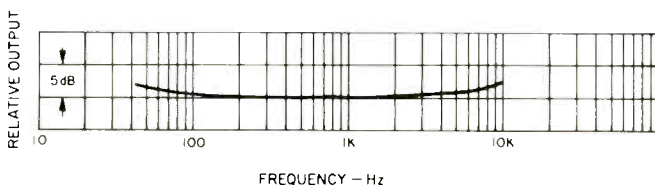
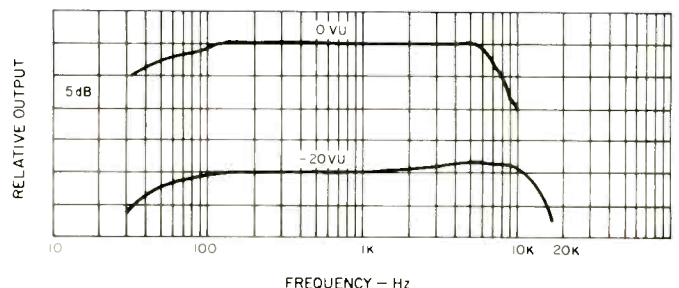
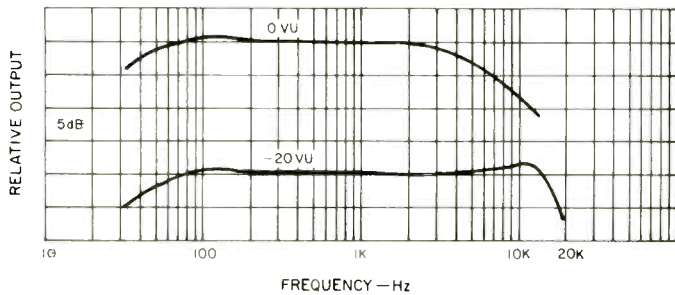


Fig. 2—Record-Replay response with the Maxell UD tape.

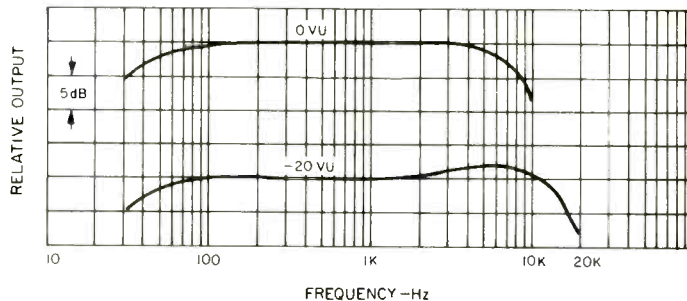




**Fig. 3—Record-Reply response with the TDK SA tape.**

above the 3 kHz point. Next a TDK SA tape was tested using the CrO<sub>2</sub> switch position as recommended and the results can be seen in Fig. 3. It can be seen that the high frequency rise is slightly steeper and the 3-dB-down point of 14 kHz is followed by a more gradual rolloff. In both cases, the low frequency response is well maintained and free from "fringing" effects. The third tape tested was the Sony Ferri-Chrome, and this cassette extended the high frequency response to 16 kHz with a small frequency peak. Note, also, that the 0 VU saturation curve of the Sony tape has a different characteristic than the other two.

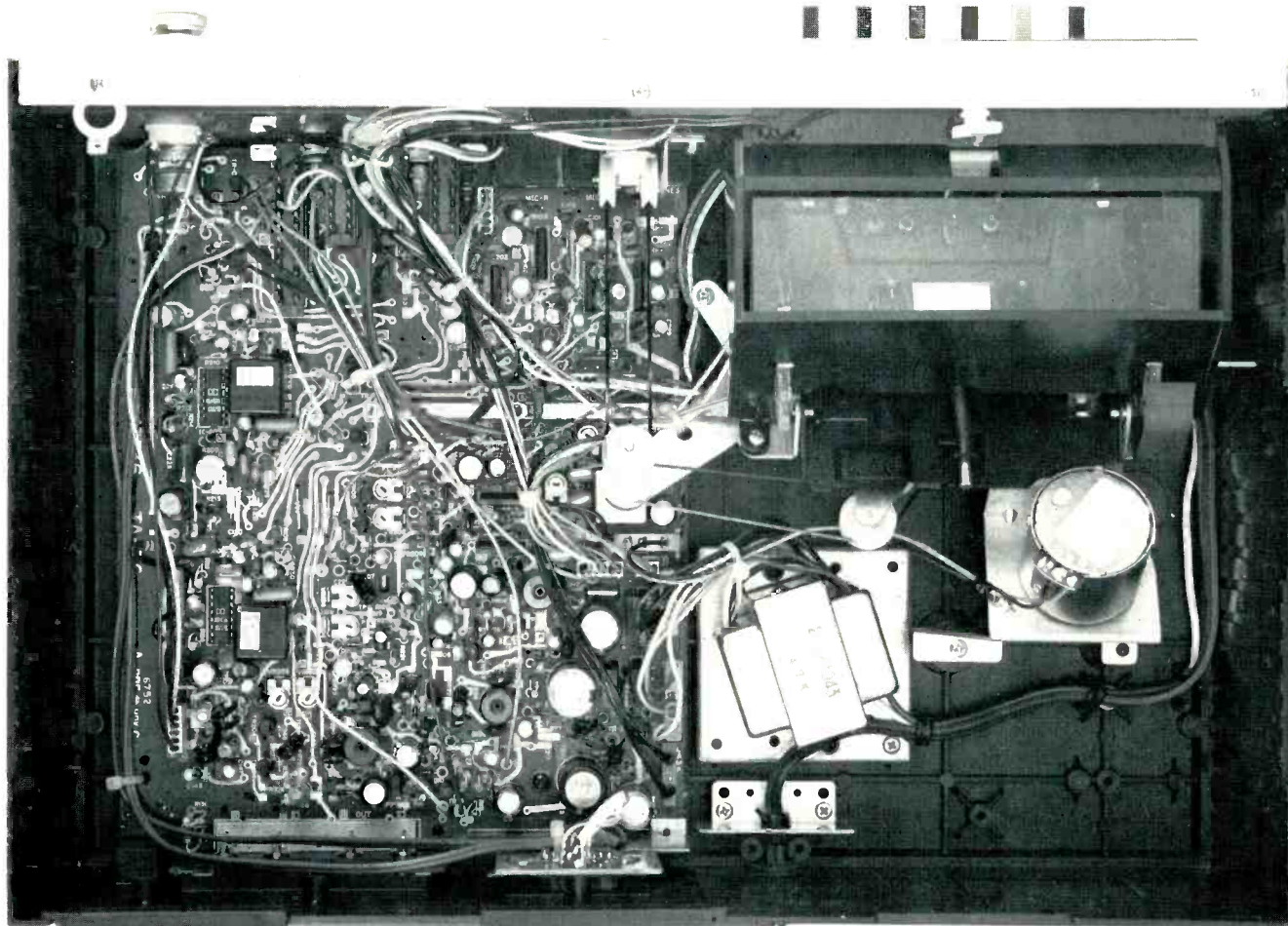
The next test was for distortion at 1 kHz using the three different tapes (see Fig. 4) and all of them showed less than 1.6 per cent THD at 0 VU. Then distortion measurements were taken in the range from 40 Hz to 6 kHz at the 0 VU level—a drastic test that is more revealing than the -10 VU figure usually used.



**Fig. 4—Record-Reply response with the Sony Ferri-Chrome tape.**

The signal-to-noise ratio measured 57 dB with the Sony FeCr tape, 56 with the Maxell UD cassette, and 57 dB with the TDK SA. With the Dolby system in operation, the figures were 66 dB, 65 dB, and 67 dB respectively (ref. 3 per cent THD, "A" weighting). The input required for 0 VU was 75 mV, and the output was then 320 to 500 mV depending upon the type of tape used. Microphone sensitivity was 0.58 mV which is somewhat lower than average. There is no separate microphone input control, and insertion of the microphone plug disconnects the line input. Noise in this mode increased by 5 dB. Crosstalk measured 47 dB, and the erase efficiency came out at over 60 dB.

Wow and flutter was 0.09 per cent (DIN), better than specified. The rewind time was 155 seconds for a C90 cassette, and the speed was just under 0.5 per cent slow. Finally, the Dolby system was checked and the tracking error was found to be less than 1.5 dB down to -40 dB.



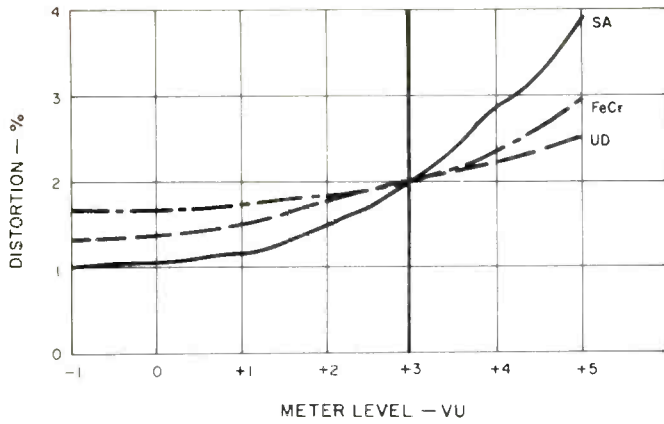


Fig. 5—Distortion at 1 kHz.

### Listening Tests

It can be seen that the Toshiba PC-3060 is not all that inferior to cassette decks in the \$400.00 class. Wow and flutter is marginally higher than you would expect from an expensive machine, and the frequency response is not quite as extended or linear—but that's about all. The extra \$150.00 or \$200.00 would buy you larger VU meters with calibrations below -20 dB, microphone input controls, a pair of variable or preset output controls, possibly a memory switch, a limiter, plus a peak-average switch for the VU meters. As the maximum output is over 700 mV, there is a chance of overloading the input stage of some preamplifiers unless, of course, input

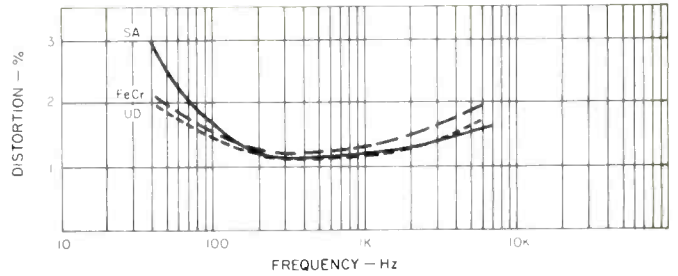


Fig. 6—Distortion vs. frequency at 0 VU.

controls are fitted. I used a Sony 2000F which has preset controls for each program source.

During the operation of the deck I found that if either the *Fast Forward* or *Rewind* lever was depressed while the tape was playing, it did not lock in and as soon as the finger was removed, the tape reverted back to the playback mode. I found this feature useful for fast indexing, and when I read the instruction booklet, I saw that Toshiba had designed it for this purpose. This proves that you should always read the instruction booklet first!

So, for those who want a reasonably priced cassette deck with good basic performance, you will not be disappointed with the PC-3060—especially if you can take advantage of the FM Dolby feature. At the present time, there are more than 145 broadcast stations equipped with Dolby encoders and more are joining the ranks each month. *George W. Tillett*

Enter No. 102 on Reader Service Card

## ANYONE PREPARED TO SPEND \$2000 ON A PAIR OF LOUDSPEAKERS WILL BUY MODEL 105'S ONCE THEY'VE HEARD THEM.

KEF, the pioneers in computer-aided loudspeaker design, set themselves the target of removing all colouration and distortion, and presenting the best possible stereo definition, at a realistic concert-hall level. The result is the Model 105, now available from your local KEF dealer.

Distributed in the USA in conjunction with Intratec, 399 Jefferson Davis Highway, Arlington, Virginia 22202. And in Canada by Smyth Sound Equipment Ltd., 595 Parc Industriel, Longueuil, Quebec J4H 3V7.

KEF ELECTRONICS LTD., MAIDSTONE, KENT, ENGLAND.

Enter No. 21 on Reader Service Card