

# FOSTEX PROFESSIONAL MULTITRACK USER PRICE SCHEDULE

June 15, 1984



## **B-16** (Standard Model)

16-channel recorder/reproducer with 1/2" tape transport. Belt drive capstan motor; two direct drive reel motors; full I.C. logic; 15 ips with  $\pm 15\%$  variable speed operation; video interlock ready; integral Dolby C noise reduction; 12-point LED bar graph metering system.

**\$5900.00**

Modification for 7 1/2 ips operation: Call for quote.

**\*All prices are suggested retail and are subject to change without notice.**

Dolby is a registered trademark of Dolby Labs, Inc.

**FOSTEX**<sup>®</sup>  
PROFESSIONAL MULTITRACK

## **B-16D** (Shown in optional floor console)

Same features as the standard model, but with direct drive phase locked loop capstan motor. Key specifications for both models: -10 dBV (0.3V) inputs and outputs; 0 dB referenced to 320 nWb/m of tape flux; S/N ratio — 80 dB, weighted with Dolby C NR; crosstalk — 55 dB at 1 kHz; erasure — 70 dB at 1 kHz.

**\$6800.00**

Modification for 7 1/2 or 30 ips operation: Call for quote.

## **B-16DM** (Independent Monitor Model)

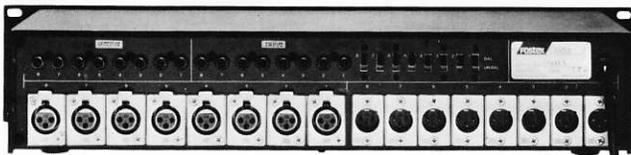
The B-16D with the following additions: a third head for tape reproduce; a 7" rack panel with 16 independent channels of reproduce and Dolby decode; a remote control unit. This remote unit lets you select any combination of 16-track reproduce which can then be monitored via the headphone jack with independent level control, or via the line out jack. There's a meter for fast alignment and a switching facility for source/tape comparisons without touching the recorder.

**\$9600.00**

## B-16 OPTIONS

Model	Description	Price
8090	Remote Control unit with all transport command functions, 16 track select for record ready, plus a cue switch for setting the end of a section to repeat (loop).	\$ 450.00
AL-16	Auto Locator has all above features and functions, plus a 9-position key pad. The recorder can be programmed to repeat (loop) between any two positions.	\$1200.00
8050	Remote foot switch for punching in and out.	\$ 15.00
9012	10½" Metal reel with Fostex logo.	\$ 20.00
9905	Rack mount adaptors.	\$ 60.00
9080	Floor Console (requires rack mount adaptors)	\$ 360.00
9082	Meter mounting kit contains rack adaptors; blank panel; interface cable.	\$ 100.00
9200	½" alignment tape	\$ 70.00
9201	½" speed/flutter tape	\$ 60.00
1090	Record/Reproduce card	\$ 130.00
1091	Extender card	\$ 30.00
N/A	Service manual	\$ 58.00
N/A	½" 8-track playback head, mounted in front of the 16-track head stack; uses the recorder's reproduce electronics.	\$1000.00

## Other Fostex Options



**5030s**



INTERFACE with studio/commercial equipment is as simple as patching. Model 5030 converts -10 dB, high impedance, unbalanced line with pin jack connector to ±4 dBm, 600 Ohms, balanced line with XLR-type connector, or vice-versa. 8 channels per unit. Two units.

**\$1190.00**

**Fostex®**  
PROFESSIONAL MULTITRACK



**6301s**



**2050s**



MONITOR package includes two 8-channel / stereo line mixers (gain and pan controls for each channel) and a pair of self-powered personal monitors. An incredibly flexible monitor package. Four units.

**\$698.00**

Look for these and other useful audio tools at your Fostex Professional Multitrack Dealer. Chances are he's also a Fostex Pro Audio Dealer. In which case, be sure to find out about Fostex microphones, headphones and speakers.

Be especially sure to audition the new near-field point source monitors. They incorporate Fostex RP technology, which has earned over 20 international patents to date.

FOSTEX CORPORATION OF AMERICA 15431 Blackburn Avenue, Norwalk, CA 90650 (213) 921-1112

**\*All prices are suggested retail and are subject to change without notice.**

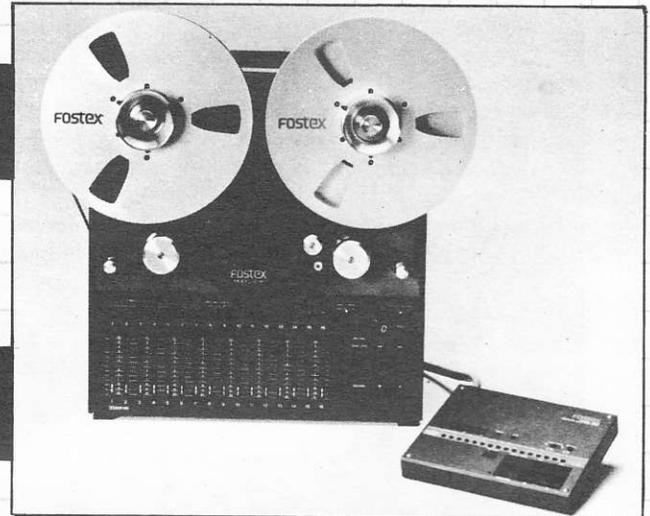


# **FOSTEX B-16 TEST REPORT**

REPRINTED WITH PERMISSION OF  
MODERN RECORDING & MUSIC  
NOVEMBER, 1984

# Lab Report

## Fostex B-16 16-Track Recorder/Reproducer



**General Description:** The Fostex B-16 is, first and foremost, a remarkable engineering achievement. Being able to lay down 16 independent tracks on half-inch tape is no small feat, and that's what the B-16 lets you do—easily and effectively. For multitrack live recording dates in the field, or even for small-studio work, the B-16 may well be the answer to a recording engineer's dream. With it, no more sub-mixes are needed; you can do a full 16-track live recording where formerly you had to settle for 8 tracks.

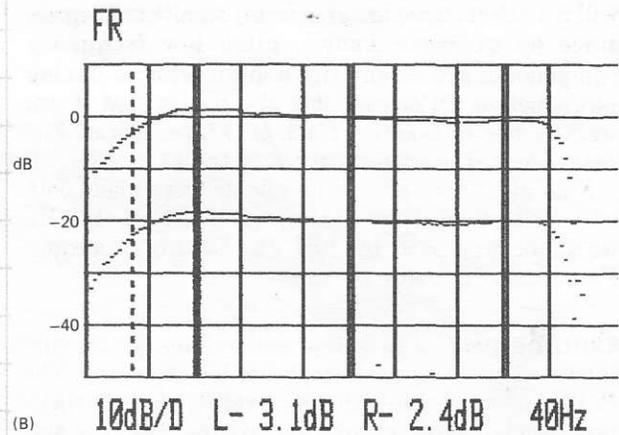
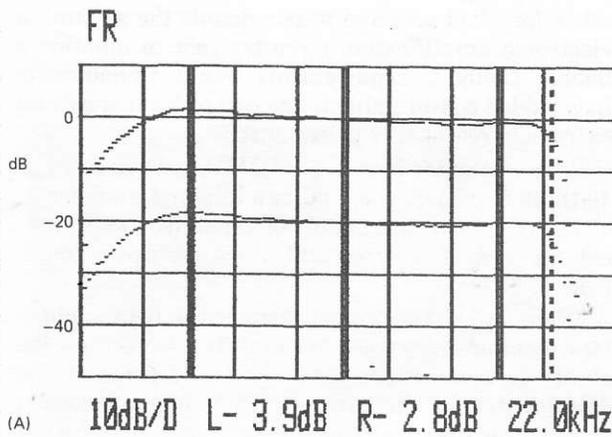
To be sure, cramming 16 tracks on half-inch tape means that each track is about as wide as the narrow tracks you find on a home cassette deck. You'd think, therefore, that such important parameters as frequency response, signal-to-noise ratio, headroom, and distortion would suffer. Not so, thanks to such innovations as Dolby C, a superb, proven half-inch tape transport, an unusually precise head configuration and excellent record/playback electronics. Many of the features demanded of a professional recorder are there, including punch-in recording. The one thing that is *not* there is tape monitoring, since the record head is also the reproduce head. With the excellent LED meters available for each channel, however, you probably won't miss the third head in actual production work. With the B-16 calibrated for fixed input and output levels (there are no front panel level controls—only calibration controls for initial adjustment), you will, of course, need a 16-in/out console of some kind to go with the B-16. A remote control (Fostex Model 8090) can be interfaced with the B-16 via a remote control jack on the rear panel.

The 16-channel LED Bar Graph meter on the front panel of the B-16 can be lifted out and installed at a remote location such as a mixing console or video switcher. An optional meter mounting kit is available for that purpose.

**Control Layout:** The reel holders of the B-16 are equipped with permanent NAB hub adapters. The pinch roller, head assembly, and other elements in the simple tape threading path are fairly conventional, and there is a tape sensor which is activated to put the transport in the stop mode if tape breaks or at end-of-tape. A head shield gate in front of the head assembly can be manually raised or lowered.

The lower right section of the front panel contains a dual concentric pitch control knob. The outer knob is used for large amounts of pitch change, the inner knob for trimming pitch to exact requirements. A pitch control switch nearby is used to bypass the pitch control when precise 15 ips speed is desired. A five-digit counter display nearby shows hour, minute, and seconds of tape travel. For tape positions below the zero point, a minus sign (-) is displayed in front of the hour numeral. A reset button for the counter is located adjacent to it. Transport touch-buttons include PLAY, FAST FORWARD, FAST REWIND, STOP, RECORD and ZERO RETURN. Touching this last-named pushbutton will cause the transport to rewind tape to precisely the zero point on the counter.

Sixteen small pushbuttons spread across much of the width of the front panel are positioned above the 16 bar-graph LED meters. These pushbuttons determine whether recording can begin on a given track. If the tape is not in motion, depressing a specific track button places that track in the RECORD READY mode, and the LED above that track's meter will flash on and off. If only the main RECORD button (near the transport control buttons) is depressed, the dB meter indications and signals from the output jack will change from "tape out" to "input monitor" for those channels whose record track buttons are depressed, and if the INPUT MONITOR switch is set to Individual, the Input Monitor LED will begin to flash. This mode is cancelled by again



**Figure 1. Frequency response, record/play, without Dolby noise reduction. Cursor shows high frequency cutoff (A) and bass cutoff (B).**

depressing the record button. If the record and play buttons are depressed together, recording begins, the Record Track LED stops flashing and remains lit continuously, and the Record LED turns on.

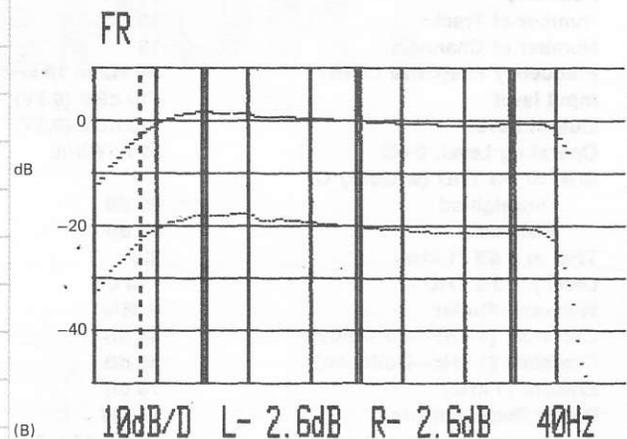
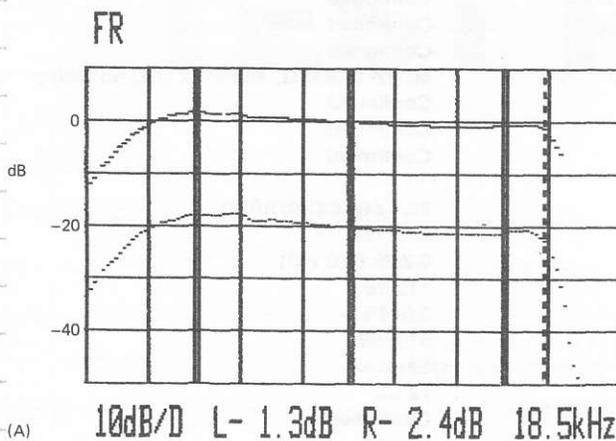
If the tape is rolling in the PLAY mode, depressing a record track button readies the track for recording. If the tape is rolling in the record-ready mode, the record LED near the record button will flash and subsequent depression of a record track button will immediately cause that track to enter the record mode. It is this procedure which is used for punch-in recording of any of the 16 available tracks. An input monitor selector switch, if set to the ALL position, will cause all channels to read input monitor levels and a green LED nearby will be lit. If the switch is set to INDIVIDUAL, individual channels can monitor input signals. A cue lever located beneath the head block assembly, if pushed forward towards the head, makes the tape lifters retract, allowing tape cueing during FAST FORWARD or REWIND modes.

The rear panel contains the required input and output jacks for each channel, the remote control connector jack, a remote punch-in/punch-out jack that

accepts a Fostex Model 8050 footswitch, a meter jack (for use when the meter assembly is remotely located), and the noise reduction switch. In the INT position of this switch, the built-in Dolby C circuitry is active. When the switch is set to EXTERNAL, the Dolby C system is bypassed and an external noise reduction system can be patched into the system.

While the control layout as described may seem a bit complicated at first, we found that if we followed the instructions step-by-step, the full versatility of the B-16 was easily accessed. After a few minutes of working with the machine, we were quickly and efficiently performing such standard functions as ordinary multitrack recording, overdubbing, punch-in/punch-out recording onto given tracks, and, of course, playback. While we did not work with an associated console during our bench tests, it was clear that the addition of a 16-track console would in no way make use of the machine any more difficult or complex.

**Test Results:** Results of our laboratory measurements are summarized in the VITAL STATISTICS



**Figure 2. Frequency response, record/play, with Dolby noise reduction. Cursor is set to show high frequency cutoff (A) and bass cutoff point (B).**

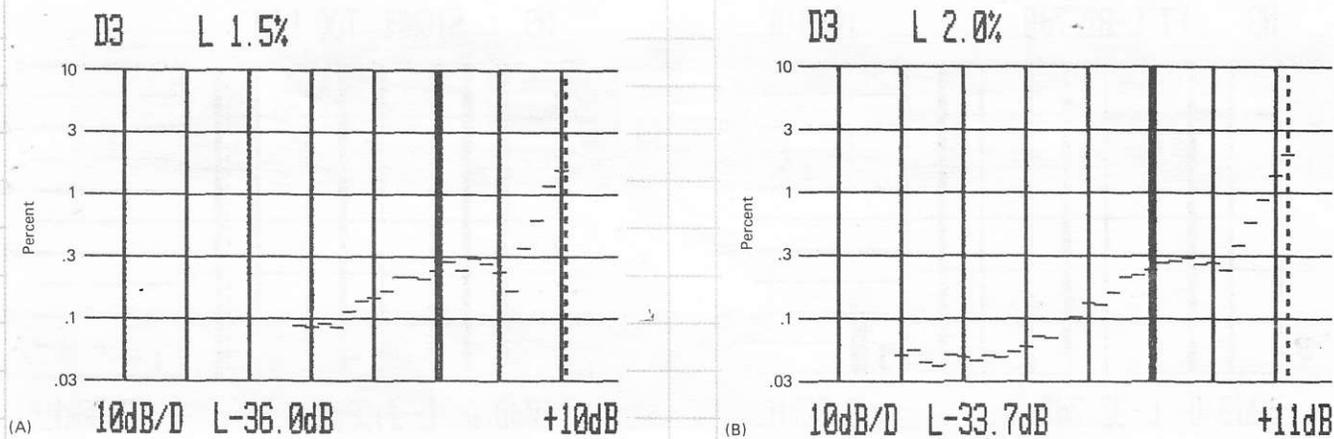


Figure 3. Third-order distortion, record/play, vs. record level, with Dolby (A) and without Dolby (B).

chart found at the end of this report. In order to be fair and yet thorough, we elected to use a pair of adjacent tracks for tests involving crosstalk between channels. By the same token, we felt that it would be unfair to measure such parameters as frequency response and signal-to-noise using the outermost tracks, and so for those measurements we selected a pair of tracks near the center of the half-inch wide tape. We later discovered that had we used the outer tracks, results would have been essentially the same; quite an achievement when you are trying to accommodate 16 tracks on half-inch tape!

RECORD/PLAY frequency response, without Dolby C turned on, was flat (within 3 dB) from 40 Hz to 22.0 kHz at a -20 dB record level (relative to 320 nWb/m, or 0 dB on the LED metering system). *Figure 1* shows the graphic results obtained at 0 dB record level (upper curve) and at -20 dB (lower curve) over the range of 20 Hz to 40 kHz. *Figures 1A* and *1B* are identical, except that the dotted line "cursor" has been moved to the high-frequency cut-off point in *Figure 1A*, while in *Figure 1B* it has been positioned to the low-frequency -3 dB point (or, as close to that attenuation as possible); in this case 40 Hz. The double vertical lines in all of

these frequency graphs represent (reading from left to right) frequencies of 100 Hz, 1 kHz and 10 kHz. Vertical scale in this and other figures of this type is 10 dB per division.

A second set of frequency response measurements was made with the Dolby C circuitry turned on. Results are shown in *Figure 2*. This time, response extended to slightly above 18.5 kHz and to slightly below 40 Hz at the bass end. Results were still better than the minimum specified by Fostex. Again, the dotted line "cursor" in *Figures 2A* and *2B* has been positioned to show the closest frequencies to the -3 dB roll-off points at the bass and treble ends of the sweep.

*Figure 3* shows a plot of third-order harmonic distortion as a function of recording input levels. Results shown in *Figure 3A* are with Dolby C active; while those in *Figure 3B* are for the Dolby-Off condition. The double vertical line represents 0 dB reference level, while each division horizontally represents an increase (or decrease) of 5 dB with respect to that level. Our test equipment generally starts plotting at around +10 or +11 dB above the reference level and, as you can see from the results, even at those recording levels, distortion had not

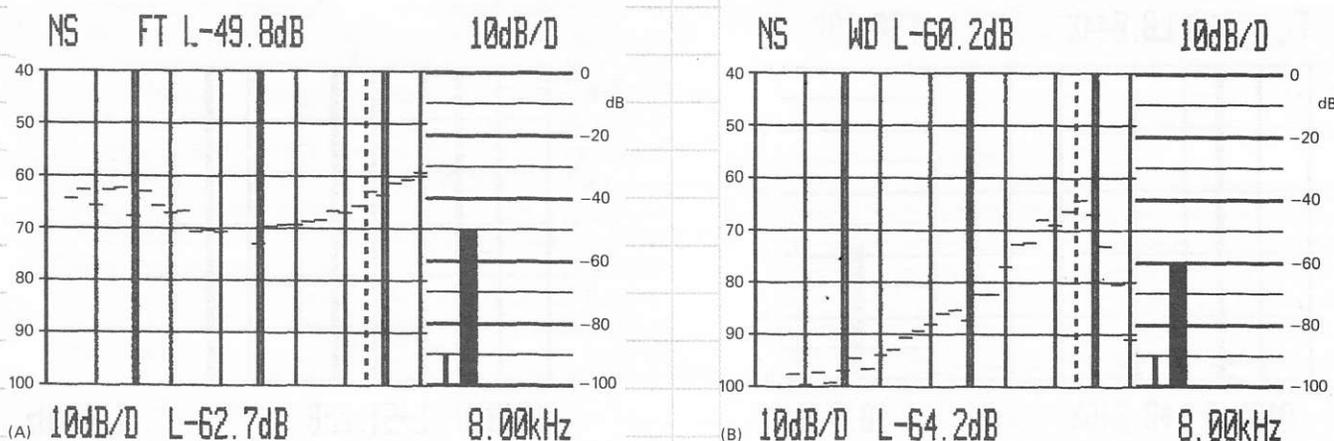


Figure 4. Signal-to-noise analysis, without Dolby, measured without weighting curve (A) and with CCIR/ARM weighting (B).

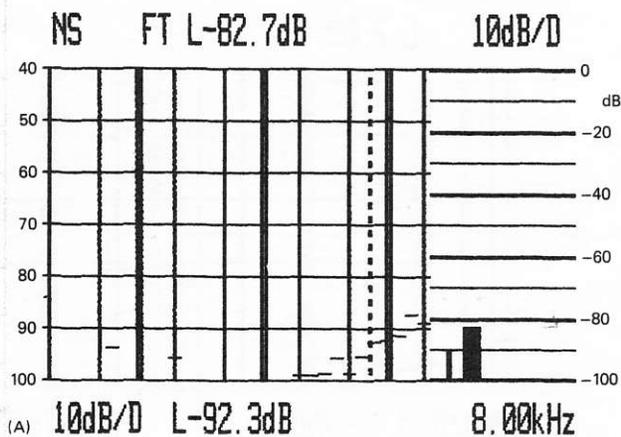
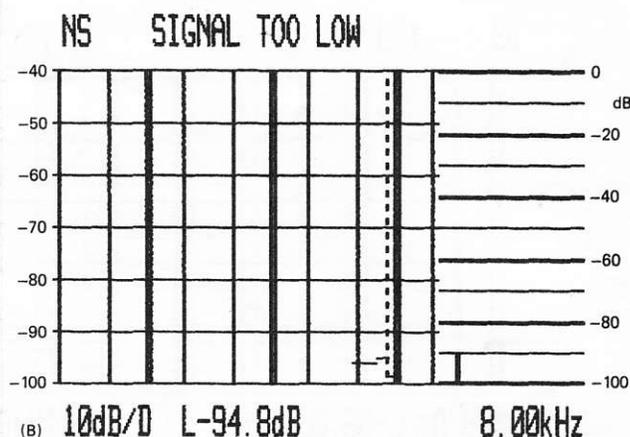


Figure 5. Signal-to-noise analysis measured with Dolby C, unweighted (A). When weighting curve

reached the 3 percent maximum which we use as a reference for maximum permissible recording levels. We estimated, therefore, that headroom would be about +12 dB, with or without Dolby on, and separate measurements using an ordinary distortion analyzer confirmed that estimate. At nominal 0 dB recording level, third-order distortion measured only 0.24 percent with Dolby C and 0.25 percent without Dolby. These results are far better than the 1 percent claimed by Fostex. The tape used, incidentally, was Ampex, a reel of which was supplied with our test sample.

Several analyses of signal-to-noise were made, both with and without Dolby noise reduction turned on. As shown in Figure 4, S/N without Dolby and without a weighting curve measured 49.8 dB. Adding a CCIR/ARM weighting system, this figure improved to 60.2 dB. For the results shown in Figure 5, Dolby C noise reduction was activated. This time, the unweighted S/N measured a very high 82.7 dB. When we added CCIR/ARM weighting, the message seen above the graph of Figure 5B tells the story; the noise level was simply too low for our test equipment to measure! In short, the signal-to-noise ratio obtainable with Dolby C added to these very narrow tracks is a lot



(CCIR/ARM) was added, noise was too low for test instrument to read.

better than we would have ever suspected. Effective dynamic range, using the built in Dolby C, is so high, in fact, that it would not be unreasonable to use this deck as a mastering system for a recording that was ultimately intended for transfer to Compact Disc format!

Wow-and-flutter was also analyzed using our Sound Technology 1500A Audio Analyzer, and, as displayed in Figure 6, the WRMS value of wow and flutter measured only 0.044 percent, while the peak wow component, at 10 Hz, measured 0.045 percent. Again, the sample did much better than the minimum specification published by Fostex. Channel separation, plotted in Figure 7, was particularly good at the high frequency end of the spectrum, where we would have expected it to fall off. As shown in the diagram, separation at 1.0 kHz measured 51.2 dB; a bit short of the 55 dB claimed, but remember that we measured separation between adjacent tracks. That is a "worst case" condition, and separation between more widely separated tracks is much higher; as high as 60 dB, in fact. What did surprise us somewhat was the rapid decrease in separation at the extreme low-frequency end of the audio spectrum. At 100 Hz, for example,

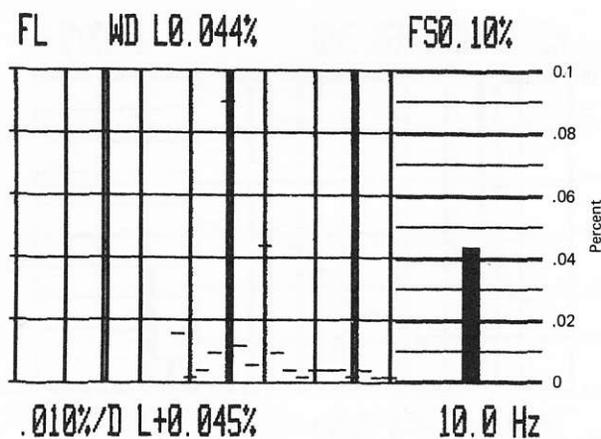


Figure 6. Wow-and-flutter analysis of Fostex B-16.

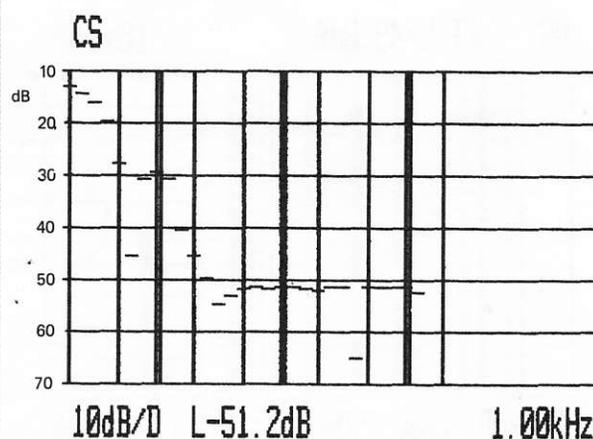


Figure 7. Channel separation vs. frequency of Fostex B-16; Dolby C is off.

separation between the two adjacent channels we tested had decreased to just over 30 dB. Happily, that will not affect stereo imaging to any significant degree, since as everyone knows, ultra low frequency components are essentially non-directional during reproduction. Of course, this also means that if you want to put an isolation track onto tape, it would be best to leave the adjacent track or tracks blank.

Note also that our measurements were made only with Dolby C off. Thus, the measured 51.2 dB at 1 kHz would be improved by 19.6 dB, handily exceeding Fostex's 55 dB Dolby-On spec.

**Comments:** Our first impression of this remarkable tape deck remains unaltered after bench testing. The B-16 is, we would think, exactly what many professional music groups are looking for. It is also what many small recording studios who have to do remotes and are limited in terms of space inside their vans or trucks have probably had right at the top of their "wish lists." Tape motion during fast winds was very smooth and quieter than on most professional decks we tested of late. If you use the ZERO RETURN REWIND mode, the system quickly finds the 0:00:0 point unerringly. Sometimes that means a slight overshoot, but that's followed by a quick return to the correct point. Though the owner's manual doesn't mention it, we soon discovered that if you press ZERO RETURN and follow that up with a press of the PLAY button, the system "remembers" your instructions and goes right into the play mode after the zero point has been reached. Punch-in recording resulted in absolutely no audible "glitches" during playback, and overdubbing or "sync" recording was easily and perfectly accomplished from any track to any other track or tracks by the versatile track touch buttons used in combination with the monitor switch and record buttons.

Of course, tape monitoring would have been nice,

but we suspect that having to come up with two perfectly aligned 16-track heads (one for record, the other for playback) and nearly double the amount of electronic amplification circuitry (not to mention a double Dolby C requirement) would, undoubtedly have added considerably to the cost of what is now an extremely reasonably priced machine.

(Editor's note: the Fostex B-16DM does have a full 16-track playback head and 16 additional channels of Dolby C for full monitoring capability, and including remote control and other features. The price is \$9,600.)

Even if you have been accustomed to being able to tape monitor every track in a multitrack machine, the ability to monitor previously recorded tracks while dubbing tracks that are currently being recorded offsets the disadvantage of full tape monitoring facilities. And, as we said at the outset, those 16 LED bar-graph meters remove a lot of the doubts otherwise associated with this type of non-monitoring recording. Fostex obviously has studied and fully understands the needs of its potential customers—the music industry and the small recording studio owners—and has come up with a product that seems to fill their requirements perfectly.

B-16 options include a full remote control with all transport functions at \$450; an auto locator with all the features of the remote control plus a 9-position key pad permitting the recorder to be looped between any two positions at \$1,200; dual 8-channel interfaces convert the -10 dB, high impedance unbalanced lines to +4 dBm, 600 ohm balanced lines with XLR-type connectors, the set being \$1,190. As a special feature, Fostex has available a half-inch 8-track playback head that can be mounted in front of the 16-track head stack, using the recorder's reproduce electronics. This permits half-inch 8-track formatted tapes to be played on the B-16; the price is \$1,000. This must be requested at the time of ordering your B-16.

### FOSTEX MODEL B-16 TAPE RECORDER: Vital Statistics

SPECIFICATION:	MANUFACTURER'S CLAIM	MR&M MEASURED
Tape Speed	15 ips*	Confirmed
Reel Size	10 1/2 inch      10 1/2 inch	Confirmed
Number of Tracks	16	Confirmed
Number of Channels	16	Confirmed
Frequency Response (3 dB)	40 Hz to 18 kHz	40 Hz-18.5 kHz, 40 Hz-22 khz, no Dolby
Input level	-10 dBV (0.3V)	Confirmed
Output Level	-10 dBV (0.3V)	Confirmed
Operating Level, 0 dB	320 nWb/m	Confirmed
S/N/ re 3% THD (w/Dolby C)		
Unweighted	60 dB	82.7 dB (CCIR/ARM)
Weighted	80 dB	See Text
THD at 0 dB (1 kHz)	1.0%	0.25% (3rd HD)
Level for 3% THD	+10 dB	+12 dB
Wow-and-Flutter	0.06%	0.044%
Crosstalk (1 kHz—No Dolby)	44 dB	51.2 dB
Crosstalk (1 kHz—Dolby on)	55 dB	See Text
Erase (1 kHz)	70 dB	72 dB
Power Requirements	170 W	Confirmed
Dimensions (W x H x D, in)	17 1/2 x 17 x 9 1/4	Confirmed
Weight	67 lbs.	Confirmed
Price: \$6,800.00		

\*Fixed and variable speed modes available. In variable mode, ±15%

# FOSTEX<sup>®</sup>

## PROFESSIONAL MULTITRACK

### B-16D

FOSTEX

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 - .16

The B-16D is the latest achievement of the engineering team that has put more multitrack recorders into the hands of more people than almost all others combined. It's compact, affordable and well-suited for any number of professional applications. Different models have been designed to meet specific production needs, and a variety of optional accessories are available to configure this versatile machine in a number of "User Friendly" ways. The B-16D. Another first. From Fostex.



# The World's First 16-Track Re

### 16-Track Flexibility

More than any other factor, the multitrack tape machine determines the actual recording flexibility of an audio production facility. There are logarithmic progressions in flexibility as you move from 4-track to 8-track to 16-track machines.

The freedom to experiment expands considerably when you have open tracks.



### 16-Track Efficiency

The acceptance of the smaller, more efficient machine in many related fields—from aerospace and automotive to computer and video—suggests a basic trend to reduce size and increase efficiency.

That's the reason the B-16D exists. It's the newer, better way to increase your audio production efficiency.

It fits nicely into the cramped confines of a remote truck. Live multitrack recording dates have suddenly become straightforward.

Extra dollars can be stretched from tight production budgets when you have your own in-house audio sweetening facility. The B-16D comes pre-wired for video interlock synchronizers, and it locks up fast in the chase mode.

The operational logic is so well defined, and the internal switching is so convenient, you don't need someone else to help work the recorder. The B-16D is the ideal recorder for the serious musician, songwriter or producer who prefers to work alone.

### 16-Track Economy

Consider all the key money issues: initial investment, options and system interface, operational costs (tape), maintenance and resale.

Your Fostex Professional Multitrack Dealer can show you in black and white, point by point, why the B-16D is the smartest, most economical 16-track investment you can

possibly make.

### 16-Track Reality

The B-16D was made possible by innovative advances in head technology, record/reproduce electronics, the incorporation of Dolby C Noise Reduction and the proven design principles of the half-inch tape transport.

Signal quality and overall performance characteristics are far beyond the practical limitations of most commercial media. So regardless of your application, look to the B-16D to increase your audio production efficiency and flexibility in the most economical way possible.

### The Transport

The rigorous demands of multitrack recording—the constant back and forth use of the same piece of tape—can strain the tape if proper tension control is not maintained.

The design of the B-16D ensures constant tension in every mode. Two sensor arms constantly monitor motion and govern the two direct drive reel motors for smooth, positive control. Full IC logic.

The latest high torque motors and solenoids all consume less current, so a more compact power unit is used for less heat and less weight.

Motion and tension sensing, servo control, tachometer and audio switching all interface to a central LSI. This dedicated chip is the intelligence behind the B-16D's tape handling prowess.

In the EDIT mode, you have servo control over the reels, so you can rock one-handed to find a precise cue. This is especially useful if you have to get rid of a kick drum beat or a hiccup just before the vocal.

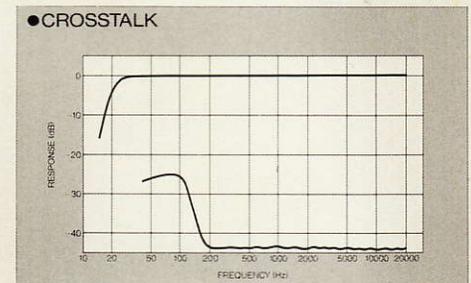
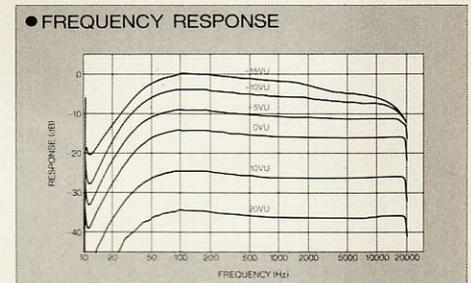
Other editing conveniences include a manual cue lever to defeat the tape lifters during fast wind modes, and a simple push-push retractable hum shield gives excellent working access to the heads.

The real time counter is a digital display in hours, minutes and seconds, and provides both plus and minus times relative to zero set. Elapsed time is logged in both the play and fast wind modes, and search-to-zero can be accomplished from either direction.



### The Electronics

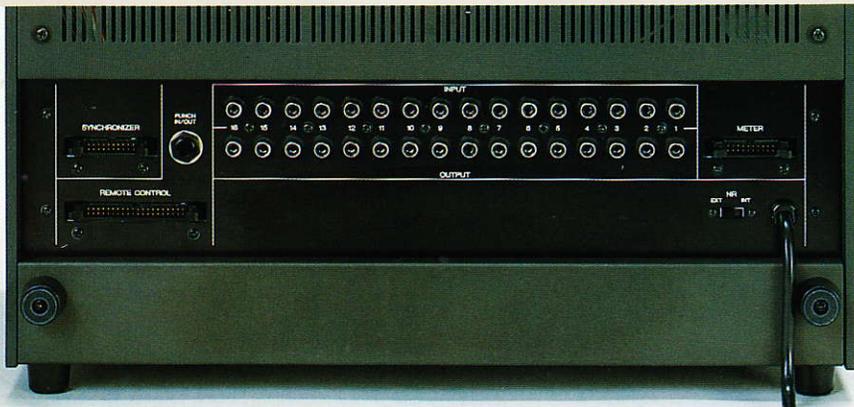
The precision head assembly is a breakthrough in design that has made the unique format of the B-16D possible. Special high density permalloy is used, with a core design which reduces contour effects to less than 1dB.



Adjacent channel crosstalk is only 55dB at 1kHz, which easily matches the performance of wider format machines. Heads are block mounted for accessible azimuth adjustment.

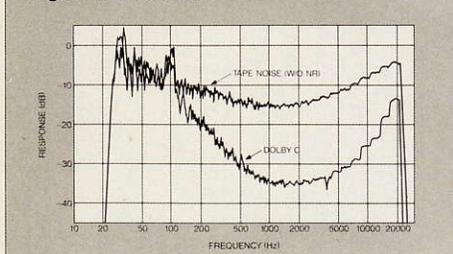
Dolby C Noise Reduction circuits are built-in, and encode/decode switching is automatic. The Dolby system operates over a constantly changing band of frequencies. In the presence of music, the band slides up out to the way of the music, so noise at

# Recorder/Reproducer to Use 1/2 inc



frequencies above the music is reduced without affecting the music itself. Low frequencies are not processed by the Dolby circuits, thus avoiding the problem of noise modulation. An additional benefit of the

●Signal to noise ratio



Dolby C system is a circuit that helps to prevent high frequency tape saturation. There is a definite musical quality about this newest Dolby system that goes beyond the specification—80dB, weighted—which you really have to hear to appreciate.

The B-16D is easy to use, too. A minimum of hard wired switches and a straightforward operational logic mean that a single artist can work alone with the B-16D.

Normally you monitor playback. Touch the ALL switch and you hear input signals to all channels. Touch RECORD and you hear input signals only to those channels in Record Ready status. Touch RECORD/PLAY (normal record mode) and you hear input to those channels recording, and sync on those channels in reproduce.

Here is a 16-track recorder where everything is where you would expect for fast and smooth operation. Metering, Monitoring, record select status are obviously and easily cross-referenced, so you don't have to give your undivided attention to the recording process.

Which gives you more time to concentrate on the material you're recording. For extra flexibility, the meter panel is removable. You can place it next to the audio console, video switcher, or mount it in our "cab over" version of the floor standing console.



#### Remote Control

The Model 8090 is a compact unit that sits conveniently flat wherever you're working. Or, if you prefer, use a normal mic stand for exact placement.

A single switch transfers record select control from the B-16D to the remote unit, so there's no chance for operational confusion.

All the functions of track record status and transport control can be commanded from the remote. Plus, there's a REPEAT or LOOP function. Identify the beginning of

a section with a ZERO reset button; mark the end with the CUE button, even in fast wind modes.

The B-16D will now cycle between these two points until instructed to stop. Selecting any transport button will automatically defeat the REPEAT mode.



#### Independent Tape Monitor (Model B-16M)

This particular model was designed specifically for the demands of live recording—typically multitrack video shoots and remote location recording.

It is configured with the direct drive PLL capstan motor, independent reproduce head, an 7" rack height unit with 16 independent channels of reproduce/decode and a remote control unit.

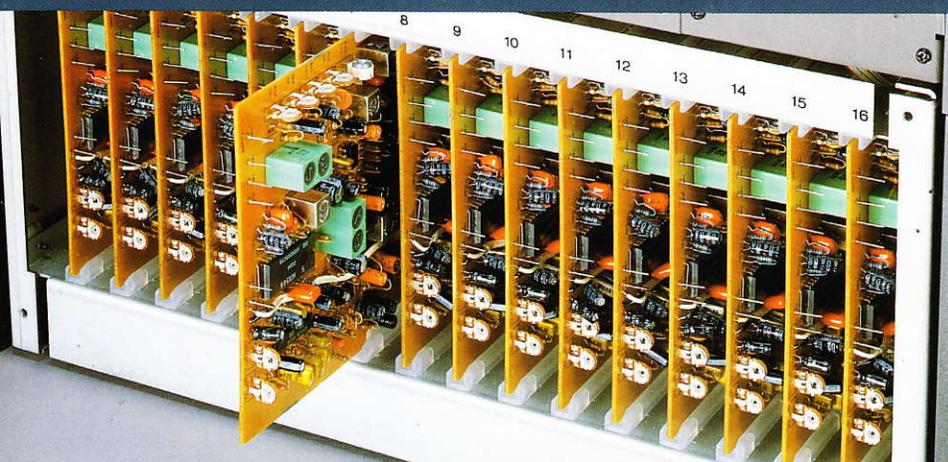
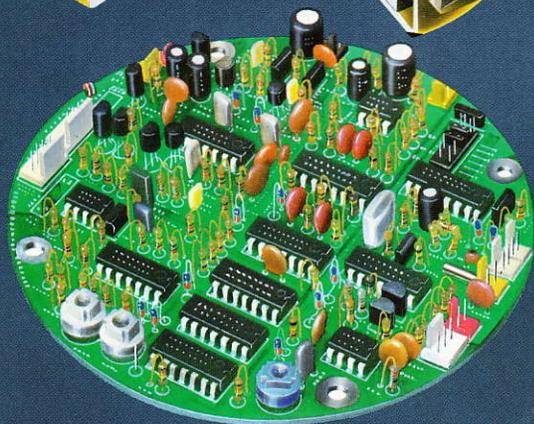
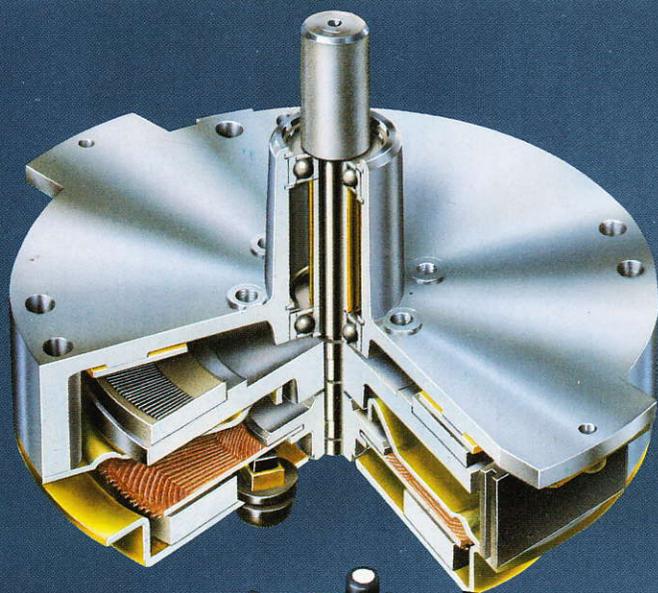
This remote unit lets you select any combination of 16-track reproduce which you can then monitor via the headphone jack and independent level control, or via the line out jack. There's even a meter for fast alignment.

What you have is a dedicated independent monitor system. The third head feeds an entirely separate set of reproduce electronics so you always know the actual reproduce signal.

Thus you can set up true simultaneous source/tape or sync/tape comparisons. And in video interlock situations, you can use the monitor head to check tape at any time, even compare reproduce with input, without touching the recorder's electronics.

*This model is available only through FOSTEX Corporation of America.*

# h Tape.



### Direct Drive Capstan Motor

A quartz oscillator generates a reference frequency of 38.4kHz. The capstan motor itself generates another frequency—2.4kHz at 15 ips. An error detection circuit within the feedback loop compares the two frequencies and varies the current applied to the motor whenever erratic motion happens.

As this correction takes place, the two frequencies are locked together such that their phase relationship is identical. Even the slightest irregularity of the motor is thus detected, and compensation results.

This is the advanced Frequency Generated Servo-controlled Phase Locked Loop Direct Drive Capstan motor. It's the textbook design for rock solid speed control.

And because inertia is lower, it locks up faster with synchronizers, for example, in video post-production applications.

### Plug-In Electronics

Each of the sixteen audio circuit boards carries the full record, reproduce, control logic, bias and noise reduction circuitry for one channel. These cards plug into a mother board, and all major pre-sets are available through clearly marked slots behind the hinged meter panel.

The B-16D is as easy to set-up and maintain as it is to own. Routine calibration and alignment don't require the specialized services of a studio maintenance tech. The service manual, spare circuit boards and extender cards are all readily available so that you can maintain your B-16D in top professional condition by yourself.

Easy to own, easy to use, easy to maintain top performance. The B-16D gives you 16-track flexibility the easy way.

# B-16D

PROFESSIONAL MULTITRACK

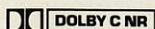
## SPECIFICATIONS

<b>Tape</b>	1/2 inch tape width, 1.5 mil base (Ampex 456, Scotch 226 or equivalent)
<b>Track format</b>	16 track, 16 channel
<b>Reel size</b>	10 1/2 inch, NAB hub
<b>Tape speed</b>	Fixed : 15 ips (38cm/s) $\pm 0.1\%$ Variable: 15 ips $\pm 15\%$
<b>Inputs (X16)</b>	-10dBV (0.3V) Impedance: 25k ohms, unbal.
<b>Outputs (X16)</b>	-10dBV (0.3V) Load impedance: 10K ohms, unbal.
<b>System operating level Equalization</b>	0dB referenced to 320nWb/m of tape flux IEC (infinite + 35 $\mu$ s)
<b>Overall frequency response</b>	40Hz—18kHz, $\pm 3$ dB
<b>Signal to noise ratio</b>	80dB weighted, 60dB unweighted (With built-in Dolby C) Referenced to 3% T.H.D. level (10dB above operating level) at 1kHz
<b>T.H.D.</b>	1% at 1kHz
<b>Erase</b>	70dB at 1kHz
<b>Crosstalk</b>	55dB at 1kHz
<b>Wow &amp; flutter</b>	$\pm 0.05\%$ peak weighted (IEC/ANSI) measured with flutter free tape
<b>Power requirements</b>	120V, 60Hz, 170W
<b>Dimensions</b>	430(W) $\times$ 444(H) $\times$ 235(D)mm [17"(W) $\times$ 17-1/2"(H) $\times$ 9-1/4"(D)]
<b>Weight</b>	30kg (67 lbs.)

## OTHER OPTIONS

- \* AUTO LOCATOR replaces Model 8090 Remote Control. Contains all the functions of the 8090 plus a 9-position memory (repeat shuttle can be accomplished between any two positions) with keypad.
- 5030 Line Amplifier. Two of these units will give you 16 channels of direct interface to any standard +4dBm system with XLR-type connectors.
- 2050 Line Mixer. Two of these units will give you a 16  $\times$  4  $\times$  2 (-10dBv) line level mix for monitoring or as a separate stereo feed.
- 8050 Foot Switch for remote punch-in/out.
- 9905 Rack Mount Adaptors.
- 9080 Metal console with castors for B-16D.  
— rack mounts 9905 are necessary.
- 9082 Meter mounting kit for B-16D.

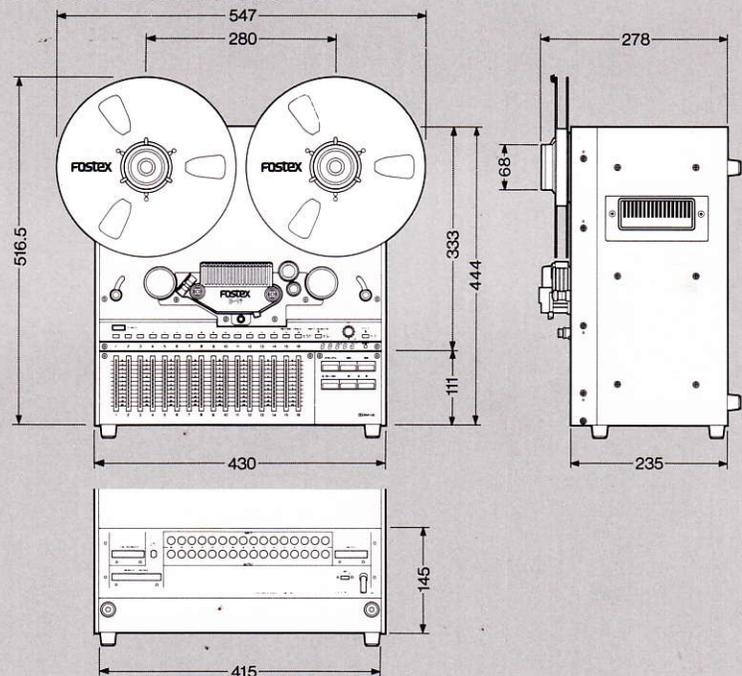
\* Manufactured in the U.K., not a Fostex brand product.



\*Dolby\* and the Double-D symbol are the registered trademarks of Dolby Laboratories



## EXTERNAL DIMENSIONS



Dimension in mm

**Fostex**  
MULTITRACK DIVISION

FOSTEX CORPORATION 560-3, MIYAZAWACHO, AKISHIMA, TOKYO, JAPAN 196 TELEPHONE:0425-45-6111 TELEX:2842 213 FOSTEX J FAX:0425-46-3198  
FOSTEX CORPORATION OF AMERICA 15431 BLACKBURN AVE., NORWALK, CA 90650, U.S.A. TELEPHONE :213-921-1112 TELEX:67/4918

Oct.1984 © FOSTEX Printed in Japan