

The little guys in the box will look at their "chart" and give you some really entertaining level shifts, as we have said, they're fast but dumb.

SUBSONICS and INTERFERENCE: The DX-4 incorporates an effective bandpass filter with -3 dB response at 20 Hz and 30 kHz. This filter suppresses undesirable sub- and supersonic frequencies to keep them from introducing errors into the encode or decode process. However, if rumble from trains or trucks, for example, is picked up by

your microphone and fed to the DX-4 — filters are not perfect — modulation of the program material during low level passages may occur. This low frequency component will not itself be passed through the recorder and so, will not be present at playback for proper decoding. If this low level decoding error is encountered, and subsonics are suspected, we suggest the addition of a suitable high pass filter ahead of the DX-4 and after the mic preamplifier for further attenuation of these subsonic frequencies.

ENTERING "RECORD"

SEE ALSO 3-7 "RECORD" and 3-8 "RECORDING MODES" of Service manual

OUTPUT SELECT BUTTONS: The signal presented at the output terminals is controlled by the OUTPUT SELECT buttons.

INPUT will typically be used for source calibrations during system interface and set-up procedures. When this button is depressed, the input signals are sent directly to the output terminals.

MONITOR will present the monitor head signal to the output jacks for those situations where it is desirable to monitor the printed signal on the tape for reference during the recording.

NORMAL will be used for most operations: recording, overdubbing (sync), and reproduce. The monitoring status is then determined by the FUNCTION SELECT buttons. **FUNCTION SELECT BUTTONS:** When the OUTPUT SELECT is in either the INPUT or MONITOR position, the FUNCTION SELECT buttons have the single purpose of determining the record status. UP is safe. DOWN is ready-to-record.

When the OUTPUT SELECT is in the NORMAL position, the FUNCTION SELECT buttons serve two purposes: (1) they determine the record status — UP is safe, DOWN is ready-to-record, and (2) they determine the monitoring status — UP is sync/tape reproduce; DOWN is source.

There are 3 ways to enter record

1. With the OUTPUT select in the NORMAL position, depress the FUNCTION SELECT buttons for those tracks on which you wish to record. The blinking LEDs will indicate ready-to-record on those particular tracks. Enter record with the TRANSPORT CONTROLS — depress RECORD (LED will light) and PAUSE together. Then push PLAY and all of the FUNCTION SELECT LEDs will remain lit until the record mode is deactivated.
2. To facilitate punch-ins, the logic can be reversed by first setting FUNCTION SELECT button in the UP position and entering record with the RECORD and PLAY buttons. Now the record LED will blink, indicating ready-to-record, and you are monitoring sync/tape reproduce. At the appropriate time, depress the FUNCTION SELECT button(s) for the tracks you wish to punch-in, and you enter record while simultaneously switching the monitor to source.
Now, imagine two different occasions where it is desirable to punch-in a correction on a given track, instead of recording the entire part all over again. If the correction needs to be made at the BEGINNING of the tune — say a hesitant start that is slightly out of sync with the downbeat — then there is no need to monitor

reproduce (sync) since the bad start will only serve to confuse the musician. Indeed, that part of the track will be re-recorded.

So the punch-in is straightforward enough: enter the record mode on the appropriate track with the corresponding FUNCTION SELECT button. Press the record button when the slate occurs — at the beginning of the tune — then enter stop at a convenient, appropriate time, after the punch-in is completed.

EXAMPLE 2: In this situation, suppose an error has been made near the end of the tune — or in the middle — the example is still valid. Now the musician will likely need to hear his performance up to that point so that the punch-in does not represent a different style or feel, and therefore, is consistent with the rest of the performance. In this case, enter record ready by pressing the record and play buttons simultaneously. The record mode will be activated when a FUNCTION SELECT button is depressed.

When the FUNCTION SELECT is in the UP position, the musician will be monitoring reproduce (sync) and probably play along with the previous performance until the time comes to punch-in the correction. When that moment occurs, simply press the appropriate FUNCTION SELECT button for the corresponding track that is ready to be recorded. Two things then happen. First, you instantly enter the record mode on that track, and the new part will replace the previous one, in sync of course. Second, the monitor is automatically switched from tape (UP position) — sync reproduce — to source (DOWN position) — so the musician can hear his new part as it is being added. The logic remains consistent.

3. For very brief "punch-in," if you can "cue" or find the spot to begin re-recording by listening to other tracks — depress FUNCTION SELECT to the READY position, put the transport in PLAY. For short segments you can now press RECORD and hold it down. The recorder will stay in the RECORD mode as long as you hold down the RECORD button. When you release it, the tape will play, but will not be erased. This mode will allow you to re-record small parts of a track that are separated by sections you wish to keep quickly, but since you cannot hear what's on the tape, it can be risky. You can also enter and leave the record mode by raising and lowering the function select buttons while the transport is "locked" in the RECORD mode. It's not necessary to enter STOP to stop recording. This is called "punch and roll" and is sometimes very useful. Again it is risky because you run the risk of waiting too long to "punch out." Be careful.