

# Philips N4520

**Test Report** (*Best Buy Magazine, circa 1978*)



Much was rumoured about this machine before its eventual appearance, and the review sample supplied was the quarter-track stereo model, a half-track one being available shortly. Three tape speeds of 9.5, 19 and 38cm/s are incorporated, and reels of up to NAB size can be used on the entirely logic operated transport. Variable spooling speed and cueing are provided, and the deck functions will transfer neatly from any mode to any other. Intended for vertical or horizontal operation, phono line in/out and 5-pin DIN sockets are mounted at the bottom of the deck panel, whilst  $\frac{1}{4}$  in jacks are fitted on the front for mike (left channel stereo, right mono) and headphones (balance and separate gain allowing ample volume and clipping margin for all types). Pre-set replay gain and record current setting are fitted, and a multi-pin DIN socket allows special testing and operating. The mains lead is 2-core, and unfortunately no earth terminal is fitted. A stereo ganged master fader is mounted

vertically, whilst the ganged rotaries for mike/DIN and line inputs each with an additional balance control were liked.

Two large VU meters can be switched to normal VU or peak reading characteristics and in each position transients were surprisingly accurately indicated, although some HF boost was applied to the meter, which is irritating. LEDs are also fitted, operating at +7dB and -10dB, and deck lever switches operate input selection sources /tape monitoring (an auto position fulfilling DIN monitoring convention), 38cm/s DIN/NAB overall equalisation (splendid), tape speed, sound on sound, and stereo/mono track selection. Whilst bias is internally preset for the three speeds, a centre idented ganged rotary allows this to be adjusted up and down for using other than recommended tape types, which is most useful. The five figure indicating tape counter shows length in meters to the nearest decimetre, and whilst this worked well, hours and minutes would have been better. Excellent NAB adaptors are supplied.

Full speed spooling was untidy, but at reduced speed it was excellent (2m.40s at fastest). The basic transport is very similar to that of the Revox 700, and was superb, with auto tensioning giving very low phase jitter and wow, and excellent stability throughout. The speeds were also surprisingly accurate, being only 0.25 fast throughout.

All input circuits were as well designed as I have even known with amazing sensitivity, extraordinarily good clipping margins and low noise, including the microphone inputs which allow moving coil as well as capacitor types to be used. Philips circuitry here, including mixing, should be a lesson to every other manufacturer, for distortion is also at a minimum.

Replay responses of the original prototypes were a little uneven, but after Philips had corrected them, they were slightly and equally down at 15kHz at all speeds, but this was not really a problem. Replay hum and noise measurements were extremely good throughout, overall azimuths were very well optimised throughout, and clipping margins were very good, although the very highest level stereo masters might show marginal clipping very occasionally.

Philips recommend Maxell UD tape, and overall responses at the two higher speeds were very well maintained, the lower speed also having a good response with particularly outstanding LF. Maximum operating levels at middle frequencies were all consistent with the tape type used. Overall noise levels were again very well optimised throughout, being very good for quarter-track stereo. A/B levels can be very well optimised with presets. All normal erasure figures were better than  $-70\text{dB}$ ; however, the quarter-track erase head allowed some bulk erase noise through, which is to be expected as there was very slight crosstalk at VLF between tracks 2 and 3 due to a slight head height error. The quarter-track stereo performance was much better than usual, no drop-outs being ever noted. The two equalisations at  $38\text{cm/s}$  were very useful, and the DIN curve is to be recommended for normal use, but the NAB one is unfortunately required for playing back many professional tapes. The only mild irritation was that after a complete spool rewind, the reels flapped around for many seconds before stopping.

Philips' superb electronic design throughout allowed optimum performance virtually everywhere, and the exceptionally low wow and flutter figures allowed piano music at the slow speed to be completely free of audible wow. The recorded quality must be said to be entirely dependent on the tape type, for no reservations in the electronics can be found. The cueing facility combined with the variable speed during spooling was found fascinating (normally found only on semi-professional machines), and the ergonomics were really splendid. This machine must achieve the strongest recommendation, and the half-track version will clearly be well worth waiting for, although for tape economy the quarter-track model seemed so good that it can be safely purchased. Clearly it provides stem competition for everyone else.

