

ACTILINEAR

(Patented)

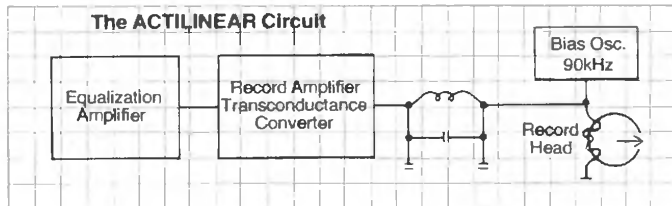
DYNEQ

(Patent Pending)

Two of the most important new words in tape recording

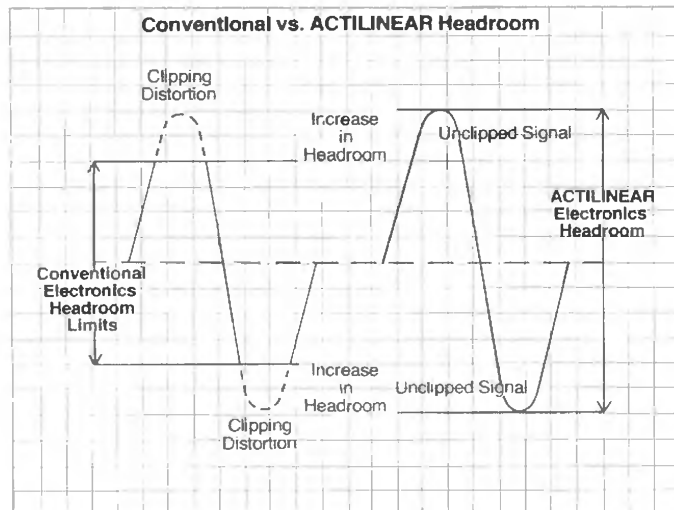
Problem:

Traditionally, tape recorder electronics have had insufficient headroom to fully exploit the greater performance capability of the new high coercivity tapes, such as metal tape. The goal of Tandberg engineers was to improve the headroom of tape recorder electronics by 18-20 dB so it can be used with metal tape.



Cause:

In conventional recording systems the summation of record & bias current in the record head is done through passive components, leading to compromise solutions which have their distinct and pronounced weaknesses—primarily a limited headroom for the signal.



Solution:

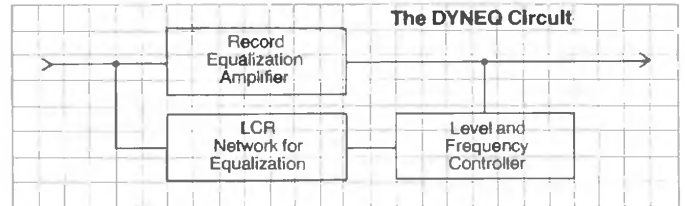
Tandberg engineers developed & patented a new recording technology without these compromise solutions (See curves above). In the new ACTILINEAR system, featured in our TD 20A open reel and TCD 340A & TCD 440A cassette recorders, the passive components have been replaced with an active Transconductance amplifier. Among the benefits of this new recording system are:

- Up to 20 dB more headroom.
- Less Intermodulation due to Slew Rate limitation.
- Improved electrical separation and less interference between bias oscillator and record amplifier.
- No obsolescence factor—usable with any type of tape available now or in the years to come.

Problem:

High frequency limitations inherent in the cassette (i.e., low speed) medium. Tandberg engineers have developed an exclusive, Patent-pending circuit that is not just a technical refinement, but a fundamentally new approach to the matter.

Whereas ACTILINEAR overcomes the limitations of elec-

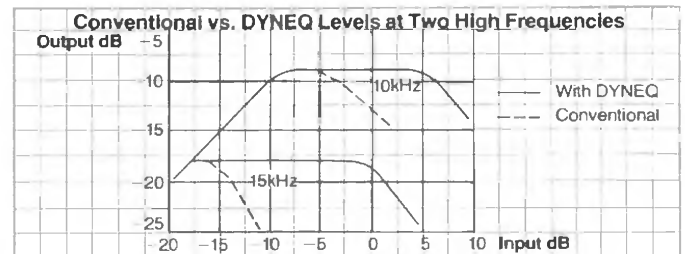


tronics at any speed, DYNEQ overcomes tape limitations at low speeds.

High frequency saturation (overload) is of particular importance with today's new direct-to-disc and digitally-mastered recordings as they deliver more energy in the high frequency range than ever before.

Cause:

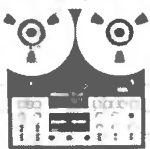
The high frequency overload—i.e., "the cassette sound"—of which tape recording purists complain is not simply a question of reaching a point where the tape can hold no more signal. At high frequencies, excessive input levels not only produce enormous amounts of distortion, but actually lower the signal level played back from the tape. In other words, once you have reached the saturation point on the tape, the more signal you try to put in, the less you actually get out.



Solution:

If, just at the point where high frequency saturation (overload) begins to occur, you could automatically lower the amount of record treble boost supplied by the equalization circuit, you could increase the high frequency output of which the tape is capable, and drastically lower high frequency distortion (See curves above). In brief, this is precisely what Tandberg's exclusive new dynamic equalization circuit does.

Yet another benefit is that the DYNEQ circuit, featured exclusively in Tandberg's TCD 440A cassette deck, not only gives improved performance with the new metal particle cassettes, but also delivers a *significant* improvement in performance with today's better premium tapes.



TD 20A

TANDBERG

Setting the standards in tape recording for over 30 years



TCD 440A

Perhaps *the* most important word in tape recording.