

AMERICAN IDOL

Probably no other tube amplifier has been sold as often as the Dynaco ST 70, either as a kit or the finished product. Now it is back again, completely "up to date" as the Series 3.



It was 1959 in Philadelphia when the Dynaco ST-70, developed by the legendary David Hafler (see box), saw the light of day. With more than 350,000 units sold, it was to become one of the best-known and most successful hi-fi devices and undoubtedly the best-selling tube amplifier of all time. All this despite the fact that it is also known in the USA as the „Poor Man’s McIntosh“. This inherited fact, of course justified by the price, cannot be ignored here, even if

there is, of course, a certain subliminal meanness to it.

After all, the ST-70 has been available from the start as a kit (Dynakit) as well as a finished device (Dynaco), which was not unusual at the time, and until today there are countless discussions about documents, circuitry, components, and of course also about possible improvements and derivatives, especially in the DIY area.

There is a huge Dynaco fandom community. Hence, the rebirth of this popular

classic, which was initiated by the Canadian Radial Engineering Ltd. as the current owner of the Dynaco and Hafler brands, is fathomable.

Of course, this is by no means a 1:1 relaunch. That wouldn’t have made sense, neither in terms of production nor safety, especially since some features could have only been realized with NOS-components. For a modern production with the corresponding number of units, this is hardly conceivable and has, therefore,

been rejected. Instead, the ST-70 „Series 3“ should „breathe“ the spirit of its developer and retain the essential construction, but be realized, using modern technologies, i.e. also improving it.

The legendary base

The original Dynaco used four EL-34 end tubes, one GZ34/5AR4 rectifier tube, two 7199 input/driver tubes (pentode/triode, one per channel), two output transformers in ultralinear configuration and one circuit board for the driver. The emphasis was on low open-loop amplification.

The driver tubes of the ST-70 took over the tasks both of voltage amplification (pre-amplifier) as well as phase reversal for the push-pull amplifier, as this way one or even two tubes can be saved. The ST-70, designed as a highly efficient power amplifier, had an output of around 2 x 35 watts. In 1988 the most famous upgrade was

The device is designed for international markets (switchable input voltage), connections and cabinet have clearly been modernized, the loudspeaker impedance is selectable. ▼

released, the VTA 70 board, in 1992 there was, for a short time, a Stereo 70 II from Sound Valves for the Panor Corporation and after 2006 the VTA ST-70 was released as a modernized kit. Similar constructions are numerous, and not all are copies. The author, for example, has an EL-34 Ultralinear power amplifier Sansui Q-3535, which is one year older than the Dynaco.

While the pentode/triode EL-34 concept was retained for the complete redesign of the Dynaco as Series 3, the rectifier tube and selenium rectifier of the bias circuit were discarded in favor of more stable and regulated semiconductor technology. Two brand-new EF86 pentodes now handle the input, a standard 12AU7 double triode the driver stage.

For reasons of stability, the filter capacity has been extremely increased and the mains transformer has been dimensioned larger, in order to also be suitable for 230 volts. All of these measures served to stiffen the tone of the slightly soft sounding original. It goes without saying that, inside, tightly tolerated components are located on the latest circuit board material and all connections are gold-plated and meet the

DAVID HAFLER



The leading mastermind behind the Dynaco ST-70 was David Hafler, a born in 1919 graduate mathematician. Together with Ed Laurent he was co-founder of Dynaco (1954/55) and David Hafler Co. (1972). In addition to its best-known product, the ST-70, that is discussed here, he has designed the preamplifiers DH-101 and 110 as well as the MOS-FET power amplifiers DH-200, 220 and 500 and XL-280, the latter being examples of early high-power amplifiers. In addition to sound quality, he always placed a high value on the affordability of his products, which is the reason why some Dynaco and Hafler products were also available as kits. STEREO's collection of classics also includes a well-preserved DH-110. Along with Saul Marantz and Avery Fisher, Hafler is considered to be one of the US' audio-pioneers. He was admitted into the Audio Hall-of-Fame in 1984 and died in 2003.



DYNACO ST-70 SERIES 3



around 3,500 €
 Dimensions: 44 x 17 x 27 cm (WxHxD)
 Warranty: 2 years
 Contact: Radial Engineering Ltd.
 Tel.: +1 604 942 1001
 www.dynaco.com

most recent standards. Instead of using several impedance taps, the adaptability of the output transformers was solved quite elegantly with a switch.

Even the setting of the bias current is anything but complicated on the new ST-70, as two yellow LEDs indicate when the optimum is reached.

In addition, channel-separated input level-controls allow it to be used as an integrated amplifier with a high level-source, which was, in our case, the excellent Rega Apollo R. With the Kudos Titan 606 it got along right away.

Up-to-date sound

From the start the Dynaco won our hearts with its musicality. With a distinct tube charm it masters the finest and most colorful details with convincing texture reproduction in the mids, while never losing track even with more complex material. Further, it lacks the softness and beat-dependent energy-lows of classic, i.e. old, tube amplifiers, that I am so familiar with. On the contrary, the bass is actually

KEYWORD

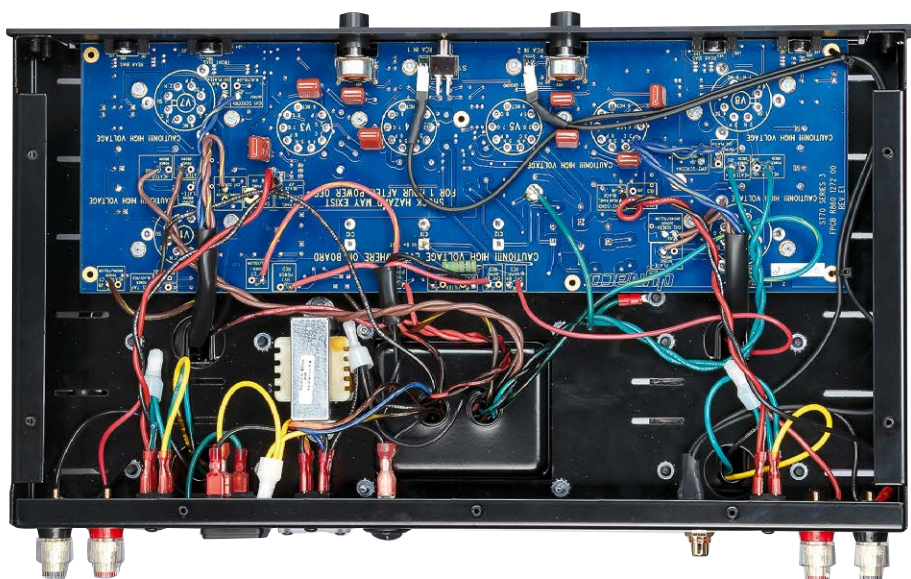
Ultralinear circuit:
 This sound-improving circuit design leads the primary winding of the output transformers back to the shielding grids of the pentode end tubes, to improve stabilization and minimize distortion.

extremely stable and concise. The Dynaco dominates space and time, with its reproduction quality being absolutely captivating in Katja Maria Werkers „Here Comes the Flood“ or „Salsbury Hill“, in the original version from Gabriel.

The legend Dynaco is alive and kicking, while, due to the technological modernization, its sound meets modern standards and is clearly better than that of its ancestor, which certainly isn't always the case. And in terms of price, even almost 60 years after its first launch and despite all the adjustments and corrections, it has remained much more attainable than the other big brand name, mentioned at the beginning.

It is, however, also obvious that such quality cannot be properly cheap nowadays. This is how David Hafler might have imagined his creation in perfection, though it would've been simply impossible in 1959. The Canadians live up to his legacy. I myself am very impressed. Respect!

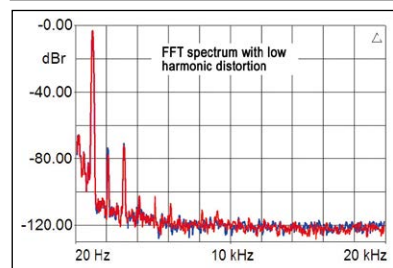
Tom Frantzen



▲ At the very latest, the Dynaco reveals its modernization from below with the accurate circuit board.

The US tube legend, the ST-70, has been sold 350,000 times. Now it is back! In its third generation, the Dynaco has become a „classically modern“ power amplifier. The refined Class AB Ultralinear Pentode circuit has given it fantastic sound and high reliability. A great statement, sounding tight and yet extremely charming.

MEASUREMENT RESULTS



Continuous power (8 Ω / 4 Ω)	34.1 W / 32.4 W
Pulse power 4 Ω (1kHz)	41.7 W
Distortion factor at 50mW/5W/1dB Pmax	0.008 % / 0.1 % / 0.5 %
Interm. 50mW/5W/1dB Pmax	0.003 % / 0.04 % / 0.9 %
Signal to noise ratio at 50mW/ 5W	81.2 dB / 92.4 dB
Attenuation at 4 Ω (63Hz/1kHz/14kHz)	8/8/9
Upper cut-off frequency (-3dB/4Ω)	80 kHz
Input level control	yes

LAB COMMENT: Good output power, well over 30 watts per channel, with just under ten watts reserve at both common impedances (8/4 ohms). For a tube device absolutely superb, even amazing distortion and noise values. Also the stereo channel separation and bandwidth are exquisite, which is exactly what it sounds like.



EQUIPMENT

One pair of speaker outputs with switchable impedance tap and one pair of high level inputs, adjustable for preamplifier or direct source, bias setting for the four end tubes, subsonic filter

STEREO - TEST

SOUND QUALITY	83%
PRICE/PERFORMANCE	★★★★☆
EXCELLENT	