



## Topaz Power Amplifier Model 572B

**Source:** Wyetech Labs

**Price:** \$11,200.00 US

**Rating:**



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This amplifier is the second generation model designed and hand crafted by Roger Hebert, president and chief technical expert of this relatively small, specialty audio establishment that also builds and markets three preamplifiers and the Topaz monoblock amplifiers (reviewed in Vol.12 #2). The company has been in business since 1996 and, though growing continually at a modest pace, their equipment is marketed only through specialty dealers who respect quality, fine craftsmanship and, most of all, music. Hebert is an unusual person who doesn't get involved in the trade's politics, thus not making many friends. However, the equipment he markets is as unusual as the person, for it makes a statement in superior

audio and can serve as an example for its immaculate execution of the art of hand crafting. The model under review is Wyetech's second generation stereo power amplifier and subtly differs from the previous model Topaz 211A with circuitry and power supply upgrades. More about this later, but first...

### Appearance:

Rather than designing a new chassis and faceplate, Hebert opted to continue using the original robust Topaz chassis, as it already eliminates resonance problems. Thus, the solid steel chassis is finished in a purple colour with an unusual looking front plate which accommodates the amplifier's RCA inputs and speaker terminals and two LEDs. A red LED indicates the unit's standby mode—a green LED shows operating and off conditions. These LEDs are large bubble-like designs imported from England. The chassis' top holds the in and output tubes and two beefy transformers, now finished in black nickel and chrome, whereas the earlier Topaz had gold-plated transformers. The rear sports a perforated cage which houses one small and two large transformers, heat sinks, capacitors and two industrial plug-in time delay relays. The unit's rear accommodates only the three-position on/off and standby switch. This amplifier oozes status and demands respect, even if vacuum tube amps may not be your cup of tea.

### Technology:

Single-ended vacuum tube amplifiers have

been around for a long, long time. However, the parts used in such designs unit takes advantage of modern parts combined with old-fashioned hand crafting throughout its design. Other similarities to the original Topaz include hand wiring and hand building on custom fixed terminal boards. Both use the same front-end to drive the output tube in the first and second stage; and both use the same Audio Note output transformer, rated at 50 watts RMS. These transformers are known for their superb sonic clarity, low distortion and excellent low frequency response.

#### Now for the differences:

1. The rated plate dissipation of a 21 IA tube, used in the original Topaz, is 100 watts whereas the new designs offers 125 watts with the 572B tube. Plate dissipation went from 75 watts ( $1200V \times 0.062 A = 75W$ ) to 80 watts ( $1000V \times 0.08 A = 80W$ ). The 211A tube was operating it's output stage at 75% of rated power whereas the 572B tube is now operating it's output stage at 64% of rated power. This spells a very modest operational burden and extends tube life—which will likely exceed expectation by 10,000 hours or more.

2. At the same time, however, the increase in current biasing of the 572B tube results in an escalation in the pure class A1 operation

from 18 watts RMS to 23 watts RMS—a lot for single-ended operation. The increased bias voltage on the 572B grid allows more drive signal without grid current thereby maintaining pure class A1 operation. As the second stage driver tube was already capable of providing more drive voltage to the output stage than the 211A tube required, no change was necessary to accommodate this increased power. The total capacitance used for the 1000 volt supplying the 572B tube has been doubled by using polypropylene in oil capacitors over the former polypropylene only capacitors without requiring more space (this allowed Wyetech to use the same chassis).

The new amplifier's DC power providing the 572B filaments is now using a choke II (pie) filter instead of the former single 90,000uf capacitor on each filament. The added 33,000uf capacitor and the 15mh choke lowers the ripple on this 4 ampere DC supply to 0.002 volts from the former 0.2 volts. (Most other designs usually use AC for the filament supply with a trim-pot to balance out the ripple, audible as hum). However this ripple on the filaments does more damage than merely adding hum to the output as it also modulates the signal at the 120Hz rate. Hebert claims that this is the worst form of distortion and the reason he uses excessive filtering of the DC filament

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supply. For added measure he also uses a pair of precision resistors (instead of a trim-pot adjustment) to balance out any remaining residual ripple effects. In the Topaz 572B design, a huge 3-element II filter on each output tube filament is employed which thoroughly eliminates this problem.

Finally, the amplifier's damping factor has been improved by using the new Svetlana 572B-10 vacuum tube. The plate impedance is lower than the previously used 211A tube which increases the damping factor from 3.7 to 4.8. This means that the output impedance changes from 2.16 ohms to 1.67 ohms for an 8 ohm speaker on the 8 ohm output setting. The effect varies greatly depending upon speaker design, where-as for a perfect speaker with a flat frequency response (good luck) it would not matter. As a lot of vacuum tube amplifiers have a very low damping factor, we consider 4.8 an outstanding achievement for a tube amplifier that operates without feedback. The high voltage power supply for the output tube has been changed to accommodate the difference in voltage and current required.

In addition, the new amplifier's impedance selector switches have been upgraded to a 50 amp rating and have a silver bat handle rather than the 40 amp rating of the former unit with black bat handles.

Note: The topic above applies mostly to Directly Heated Triodes (DHT) which use the filament as the cathode. Other triodes use what is called an indirectly heated cathode and do not place the filament power in the signal path, although in low level signals this ripple can still get through to cause hum and modulation of the signal.

There is a lot more technical information available which we believe is not as important as the result of this technology; thus, we'll get to the nitty gritty...

#### **The Sound:**

We had three pairs of very accurate loudspeakers on hand for this review, namely the JMLab Mezzo Utopias (reviewed in Vol. 12

#3), the Coincident Technology Total Eclipses and the Gershman Opera Sauvages, both reviewed in this issue. Though each has slightly different sonic personalities, all are full-range, high-end, utterly revealing loudspeakers with which every one of our listening panellists is now intimately familiar. The Audio Aero CD player, reviewed in this issue and our usual Audio Alchemist DAC/DTI Pro and Elite transport served as source components. Wiring was accomplished with Nordost Quattro Fil interconnects and AudioQuest Everest speaker cables (reviewed in Vol. 13 #1). For some auditioning sessions we also used Nordost's new Valhalla cables reviewed in this issue. Most of this equipment has been in our studio for some time, including the earlier Topaz 211A, which made auditioning the new Topaz 572B rather interesting as we compared the new with the old using familiar program material.

The new amplifier's increased power asserted itself with more weight and control of the overall sound, distinct with all loudspeaker designs used for this evaluation. Our panellists agreed that the earlier Topaz resolved bass as no other single ended vacuum tube amplifier had managed to date. The new amplifier, however, reached a touch deeper without ever loosing control over the deep bass. Thus, it is quite possible that the Topaz's bass resolution is comparable to that of the best solid state devices currently on the market and we know of only one other vacuum tube amplifier that comes close—the older Topaz. Those who love the euphonious sound of an incomplete bass are well advised to look at other amps. Those who value bass resolution, look no further.

The 211A has always been a revealing amplifier, rendering inner detail, space and air with utmost proficiency. That's clarity in the midrange area, with a blossoming quality, but without obstructing musical information. The new amplifier does this a

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touch better, adding resolution, without impairing the "blossoming" for which vacuum tube amplifiers are known and loved.

High frequency information of the "old" Topaz, while resolute, complete and extended well into the inaudible regions, didn't manage to provide a great deal of bloom. The new unit, however, sounds a bit more "tender", rounding off the sound just enough to please, without diminishing resolution.

When we compared imaging, the 572B won hands down. Improvements included focus on instruments and voices, front-to-back, horizontal and vertical information as well as more space for each instrument, indeed, each tone. All of our panellists noticed the amplifier's control over the loudspeakers' drivers, evident in bass resolution, illuminated midrange and superbly executed high frequency culmination. Best musical information was achieved with the AudioQuest Everest and Valhalla cables, followed by the slightly brighter and bolder sounding SPMs. Interestingly, the SPM/JMLab Mezzos combination sounded appropriately without the additional expense of either the AudioQuest or the Valhalla cables, indicating again that synergy is an important factor when assembling a system.

#### **Synopsis & Commentary:**

We have been using the Topaz 211A for almost four years and, though we have had great amplifiers from around the world in the studio, the Topaz never failed to perform

in line with the best—often better. Most loudspeakers reviewed in this magazine in the past 20, (or so) issues were connected to the "old" Topaz as we felt that this amplifier offered a good dose of sonic neutrality, making auditioning sessions relatively effortless. However, speakers with an efficiency rating of at or below 88dBs could not be used to their full capacity as the Topaz 211A simply didn't offer enough power at 18 watts/channel. The new 572B's power of 23 watts/channel—an increase of 5 watts/channel—will drive loudspeakers rated from 88dB to a respectable 110dB without faltering, thus providing the end-user with more loudspeaker choice. Compared with other high-end vacuum tube designs, the Topaz's superb sonic disposition leans more toward accuracy than euphoric colouration which may not be everyone's cup of tea, so to speak. However, for those who wish to achieve musical accuracy at the amplifier end of the system, choosing loudspeakers to harmonize with the set-up should not be very difficult. Most speakers we used in tests with the Topaz 572Bs produced better sound than even their manufacturers thought it possible to attain—and we tested speakers ranging from a mere \$300 to a whopping \$23,000.

If there is one beef with this amplifier—waiting for it to begin operating, as the time delay relay switching system takes over one minute while it goes from the standby to the operating mode. Other than that, no beefs, just music.

