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GS-1000: A New Flagship Headphone

as reviewed by Max Dudious



To begin at the beginning, these headphones have the signature Grado sound, the clear hear-through-the-veils presence that makes them highly valued by recording engineers, and the gorgeous mid-range that is so soprano-friendly. When I challenged them with the most difficult to record-and-playback opera stars, they sailed merrily along. Some folks say Grados are best for Rock and Pop, especially Heavy Metal with all their dazzling presence. Some detractors say they are "too brash." Others say Grados are uncomfortable to listen through. Well, I think this latest model, the GS-1000, will dispatch forever that stereotype of Grado headphones. Physically, they are lightweight and their circumaural (or around the ear) open-cell-foam ear-cups are as soft and comfy as I can remember. Musically, these new flagship 'phones can handle whatever the music demands of them. They can be delicate with a classical string quartet, able to retrieve the precise moment of attack, the smallest nuance of performance; or they can bowl you over with The Great Wall Of Grado sound from a great blues band, yet still capture the smallest details within the stonework of that wall. You pays your One Large, and you takes your pick.



The engineering team at Grado Labs has tweaked and experimented incrementally for years on this one. I think I remember John asking various folks what they thought of a prototype three or four years ago at a N.Y. Home Entertainment Show. It was cute, with the oversized foam ear-cups, wires adangle, resembling battery powered, electric earmuffs; but it didn't sound much different to me than the RS-1. Since then, Grado Labs has tweaked and modified its way (in an educated version of trial and error) until it has delivered their most excellent all-purpose headphone yet. Most excellent!! We're not talking Asti-Spumanti here: we're talking vintage Moët. Party hearty, dudes! More to the point, while I definitely get excited by technological breakthroughs (like fiber-optic interconnect cables) or material breakthroughs (like Palladium ribbon cables)—my wife, Grammy

Dudious, accuses me of being an "audio revolutionary"—most value incremental improvements on the tried and true ...over time. Grammy also accuses me of being an "audio conservative."

First, Grado Labs has taken their driver unit, proven over decades, and placed it in a more massive, but still lightweight wooden housing. Next, they designed a tea-cup shaped open-cell-foam ear-cup to distance the driver from the ear drum. This creates a larger load on the driver, one that cursorily measures to nearly four times the cubic volume of air between driver and eardrum, compared with his previous flagship model, the RS-1 (3.5" diameter by 1" deep, compared to 2.5" diameter by 0.5" deep. Do the math! pi, times the radius squared, times the depth.)

Imagination time. Imagine a good loud-speaker with a full-range driver in a sealed box. It has become a speaker designer's truism that in a smaller box such a speaker will not be able to deliver its deepest bass; the mid-bass will have more peaks, hence more impact, and it will be loud. In a larger sealed box it can have pretty deep bass (though not as deep as in a tuned and ported box), the mid bass won't have as much impact, and the overall amplitude will decrease (measured in standard ways, with 2.83v input and the microphone placed at one meter on axis) when compared with the same driver in the smaller box.



Now, let's play a somewhat more difficult imagination game for a moment. Imagine the chamber between the headphone's driver and the ear drum as a model for the speaker enclosure, with the speaker firing outward toward the room. I know it doesn't work that way in real life, but think of it in reverse. It might help. If the experience of loudspeaker designers holds up, just placing the headphone driver in a nearly four-times-larger enclosure ought to change the character of the sound, deepening the bass response, smoothing out mid-bass peaks. At the Head-Fi International Meet in Queens this spring, something like this experiment was tried, and most of the informal participants reported that no great change in the sound quality was observed with Grado's larger foam ear-cups when swapping them for the smaller foam pads of other headsets in the Grado line, those having the same sized center cutout. Some even said the larger ear-cups were detrimental to the sound. But John Grado wasn't fazed. He began doing a new series of tweaks on the driver, tweaks he won't even discuss because they're proprietary. What happens at Grado Labs stays at Grado Labs.

I'm not sure what he's done to his driver that makes it compatible with the larger volume of air, but Grado has accomplished wonders. The driver is the same old Grado driver that is in all his headphones: 32 ohm impedance, 98dB per one millivolt, he claims. I found I couldn't play the new flagship models quite as loudly as the old flagships (the RS-1s, which could play painfully loud) straight out of my Sony portable CD player. The driver might lose two or three dB of loudness in an ear-cup

that is nearly four times greater in volume than the old ear-cup.

We do know his drivers improve in performance as one listens to the headphones going up his price schedule. This, I think, parallels states of "tune" in automobile engines by one manufacturer that might have the same displacement but have increased performance due to auxiliary features; a 2-liter engine may be fitted out with different timing, compression ratio, transistorized hot spark ignition, carburetor air flow volume, exhaust volume (cubic feet per minute), amount of valve lift, over-head cams, transmission torque peak points, etc., etc. In other words, each group of drivers designated for higher price-points in the Grado line gets more tweaking, more fit and finish, more expensive labor-intensive hand operations performed on it, until designated for production. The best drivers, by test, are matched to close tolerances and mounted in Grado's best headphones. It is Grado's, and his Chief Engineer, John Chapin's experience and judgment in these things that finally bring forth an audio masterpiece.

You might ask, "How can anyone call an industrial product a masterpiece?" Well, the gull-wing Mercedes sports coupe has been considered such and has been on display in various museums since first produced in the '50s. Ever been to the Smithsonian Museum? Maybe I'll ask them what constitutes an industrial masterpiece. Or maybe I should ask the Supreme Court Justice (Thurgood Marshall, just in case you're interested) who, when asked, "What constitutes pornography?" answered, "I know it when I see it." I knew the GS-1000 was a masterpiece from the first time I heard it last spring at the Head-Fi Meet. My critical listening button was pushed, and I was concentrating as hard as I could in a crowded, somewhat noisy room. First, the bass was prodigious. The midrange was smooth and clean with no typical anomalies I could discern, what I'd call "voice-friendly." The trebles were less peaky than the RS-1. This was obvious through very old ears. And the imaging and sound-stage depth were unusually spot-on. Relative to the RS-1, the GS-1000 was the solution to all its problems, and the RS-1 is a *helluva* headphone.

Months later, after I received the review samples, I decided to take a peek at the curves of the two Grados, and that of the Sennheiser 650 model as on display at the HeadRoom website. Any one with any interest in headphones owes a debt of gratitude to Tyll Hertsens for having the courage to publish these curves on his site. I overlaid the three frequency/amplitude curves upon each other. The midrange portion of the curves, from 200Hz to 2,000Hz, of all three were nearly identical. They each had very similar printouts. But the Senn 650 had a pronounced lack of punch from 200Hz down, while the Grado RS-1 had a big plateau centered around 100 Hz, and a gentle roll-off below 50 Hz. Where the two of them rolled off, the GS-1000 had a significant rise, say from 150 Hz down to around 30Hz before it rolled off sharply. I don't know how the design exercise was executed, but if the goal was to give the GS-1000 prodigious bass, it succeeded

As I said, the three midranges were nearly identically flat, not more than a dB separating them from each other from 200Hz to 2kHz. Yet, the RS-1 has been viewed by its detractors as "brash," while the Senn 650 has been criticized for being too wanting of "sparkle and sheen," for being too restrained, too polite. Why this should be was answered in the treble performance of the three. Looking at the trebles, what was characteristic of the RS-1 were definite *peaks* of considerable height (five to ten dB) in the treble; while the characteristic of the Senn 650 were *dips* of about the same amplitude. The GS-1000, while it had a few serious peaks, was not as up and down as either of the others, so I thought of it as sounding "smoother." Having my subjective judgments backed up by the HeadRoom curves has given me a swelled head. I guess I've become a good listener. If you've a mind to, you could check me out by going through the archives and re-reading my earlier

reviews of the Grado and Sennheiser 'phones.

My GS-1000 review samples arrived from Grado a while back, and after putting them through all the tests I usually perform (How do they sound with the lights on or off? With wine or beer?), the result is the GS-1000 has two of the "house sound" Grado signature characteristics. It is rock solid in the bass, and it's very mellow (soprano-friendly, no ringing) in the midrange, with just enough high frequency peaks to give it "sparkle and sheen," yet not so much to warrant characterizing it as at all "brash." It is just about how I would design a set of headphones if that were my job, and if I had the talent to do it. I don't have any such talent, but lucky for all of us—Grado Labs has!

Listening late at night to some of my favorite CDs I found some talking points. For example, on a mono CD of Dizzy Gillespie, with one of his chamber jazz ensembles, titled *Sonny Side Up*: (Verve, 825 674-2, 1956); with Dizzy's trumpet-playing in its prime, Sonny Rollins (beginning to make a name for himself) along with Sonny Stitt on tenor saxes; plus a rhythm section of Ray Bryant, piano; his brother Tommy Bryant, bass; and Charlie Persip, drums; I could hear every damn thing, and everything was nearly as it sounds on my big rig, only better (clearer, cleaner, no listening room issues). This CD provides the novelty of listening in mono, and still getting depth, and non-overpowering bass, non-intrusive cymbals, not-too-percussive piano details along with the soloists. Dizzy is most sly with Sonny Rollins soloing on "After Hours" and Dizzy chiming in from the rear with little affirming phrases, that sometimes sound like "Eeeyow," which he achieved by some control mechanism he got from his embouchure. He was in pitch, on the beat, and he got these ironic punctuating grace notes from his horn. Diz was not loud, matter of fact he was soft enough to seem he was vocalizing the point, the equivalent of, "Go man." (Sort of like dobro player Corey Harris's calling "Yeah," and "Uh-huh," and "Ow" to urge Junior Wells on during his vocal, "Ships on the Ocean," on their *Come On In This House* album {Telarc, SACD 63395, 1996}.) I think I have assumed Dizzy was singing those chops for decades, scatting phrases, something I'd heard him do in performance. Through the GS-1000 I could clearly hear, for the first time, he was doing it through his trumpet.

On the David Grisman/Jerry Garcia CD *Not For Kids Only* (Acoustic Disc, ACD-8, 1993) there are many acoustic details that are surprising: A "horsefly" wandering around the soundstage during "There Ain't No Bugs On Me;" a surprising septet arrangement of "Teddy Bear's Picnic" adding a rhythm guitar, bass, trumpet, clarinet, and trombone to Garcia's acoustic guitar and Grisman's mandolin. But most surprising was Jerry Garcia's plaintive and haunting vocal on "When First Unto This Country," perhaps made more heartbreaking by our knowledge of his pre-mature death. In any event, his untrained, gravelly, somewhat nasal voice tells us of how the narrator was willing to die for the love of a maiden. I find Garcia's art particularly touching on this cut, his voice least affected, his phrasing nearly conversational as if he were talking directly to me. And I can't remember connecting with this song quite as unabashedly through any other reproduction system. I attribute it to the most life-like GS-1000 headphones.

Similarly, I found equally affecting Bryn Terfel's "Danny Boy" on his CD *Bryn Terfel Sings Favorites* (DG, 474 638-2, 2003). This is a full orchestral version of an Irish music-hall song, a father's love song to his son gone off to war. If you have any feeling for that situation, this one will get ya. The recording of this version of "Danny Boy" showed me something about dynamics.

Through other headphones when the music called for loud, they seemed to go to as loud as they could go too quickly, and sounded strained. The GS-1000 could take

demandingly loud passages in a more relaxed way, play them in stride without strain, as though they had something in reserve. Similarly, on that disc the duet between Andrea Bocelli and Bryn Terfel, from Bizet's *The Pearl Fishers*, came through quite loud and clear without any suggestion of stress or strain. With these 'phones, Grado has a tiger in his tank.

Another "torture test" is a recording originally marketed by the Harmonia Mundi label, but which I received owing to my subscription to the BBC publication, *BBC Music* (a free album with each issue, which I heartily recommend to classical heads as a way to expand your exposure to various periods and countries), on its own label. It is Bach, JS; *Four Violin Sonatas and Toccata and Fugue, BWV 565* (BBC Music; Vol 8, No 5; 1999). I think it is still available through the magazine. If you're interested, do a Google. The most fascinating thing about this album is the *Toccata and Fugue*, written for organ, here transcribed for solo violin. In the 7 min. 28 sec. performance the violin is has to play from its highest register to its lowest, from *ppp* to *fff*. The piece demands all sorts of pyrotechnics that produce the inevitable sounds of fingering and bowing. Through the Grado GS-1000 'phones there were no unintended violin screeches, and while there were fingering and bowing sounds, they were appropriately down in the mix. So, again, the sound of solo violin seemed spot-on for me, as natural as sitting in a small performance hall at Baltimore's Peabody Conservatory last week when some advanced students performed Messiaen's *Quartet For The End Of Time*, and I managed a seat in the fourth row.

Also, I'd like to tout you onto the Schubert's *String Quintet D 956* (Praga Digitals; PRD/DSD 250 191; 2003), sometimes simply called Schubert's "Cello Quintet," also distributed by Harmonia Mundi. It is awesome! This is generally considered a masterwork and a pillar of the chamber music repertoire. I had little awareness of just how great it was before I heard it through the Grado GS-1000 'phones. There are things that (in the past) you wouldn't "get" if you were not at a live performance, watching and listening intently. For example, in the first movement there are passages where the two celli are playing in unison (to generate heft, and darkness of tone), other times when they were an octave, or a third, or a fifth, or some strange interval apart (accenting progressive harmonics). If you have two instruments playing the same note an octave apart, it is hard to discriminate that through recordings. It is considerably easier if it is a third or a fifth separating them because the overtones differ. They say you can hear things through 'phones you can't quite make out with a free-standing system, even in a dedicated room, because of standing waves, and echoes, and decay times that mask tones. So trust me when I say there are things going on in this music that are so subtle you have to have a *primo* reproduction chain to catch. The Grado GS-1000 is a good candidate for the transducer in a prime system.

On John Pizzarelli's recent album, *Dear Mr. Sinatra*, (Telarc, SACD-63638, 2006), on the cut "Witchcraft," The Clayton-Hamilton Jazz Orchestra, a dynamite band just now gathering a following and being used on other recording dates, comes in with an earth shattering blast. This is actually a chord, rising from near silence—held hardly a second—then allowed to decay to near silence, before resuming the song. Reminiscent of Haydn's "*Surprise Symphony*," where Papa used a bass drum shot to wake the dozing audience he had lulled to sleep, this nuclear blast gets our attention, no shit, and achieves arranger Don Sebesky's purpose. It is also a minor miracle of the advancing recording technique. Each and every instrument in the seventeen piece band is doing something, within this "Surprise," and we hear each separated out. Subsequently, we follow all the parts for the rest of the song as the orchestra rises and falls at strategic moments. Another, similar miracle is on the cut "If I Had You," where the ensemble consists of five clarinets, piano, and voice. The clarinets are thrown into some very interesting chords, and through the Grado GS-1000 we

can here all the subtleties of a choir of nearly identical B-flat clarinets and one Bass Clarinet playing a rather ingenious accompaniment to Pizzarelli's thoughtful vocal. Not that other headphones can't recover the things I've listed in the previous paragraphs, but the Grados make it easier to sort things out. Definitely.

So, to sum-up: the new Grado 'phones can capture micro-details down in the mix and retrieve them in proportion. They can portray human singing in a natural way that gets closer to the goal of capturing the musician "in the room" and helps solder the emotional connection between artist and audience that makes this enterprise so rewarding. They have very good dynamic range and an ability to handle very loud passages without sounding strained. They are voiced such that they are never brash nor harsh yet they retrieve fretting and bowing sounds without putting them up too far in the mix. They resolve so well they capture harmonically related sounds without blurring them together into a chord. And (succeeding at all of the above, it follows) they capture spatial relations as well as any 'phones I've heard.. These headphones are for the minority who want to hear everything that's on a CD, especially for recording engineers, musicians, reviewers, music students, and for those audiophiles who would own the very best.

One drawback these Grados might have is, they are so good they will reproduce whatever is on the software. If you want to hear delicacy, detail, low level performance subtleties, you will need a front end (a CD/SACD player and a 'phones amp) good enough to extract everything on the software and pass it on to the 'phones. I think people with less than first rate systems will feel let down. I don't often feel that way. For example, Lowthers (that lately I've been fooling around with) tend to make lesser amps (my \$29 Sonic Impact 5w/ch amp) sound better than most other speakers do. Lowthers still play their best with the high-grade equipment (like the de Havilland /os amp), but they won't embarrass anyone who wants to play them through a twenty year old receiver. Likely they will be better than what preceded them. The opposite is true of the Grado GS-1000s. They are a bit ruthless, reproducing whatever is on the software, so whatever level of excellence describes your front end, that's what you'll get out. They won't make chicken poop into chicken salad. They will expose it for what it is. But if you really want to hear, say, an opera late at night, in private, and you have a good CD/SACD player, like the Marantz SA 1151, you'll have to go to Salzburg or Vienna to top what you'll get (great sound, emotional connection) from your Grado GS-1000s. But a top-flight Walk-around CD player, through the Grado RA-1 battery powered 'phones amp, will give you a surprisingly good approximation through the GS-1000s.

As anyone who gets mail knows, we are approaching the Christmas season. The catalogues swell my mail box to bursting even as I click and clack away. Of course it would be foolish to suggest a \$1,000 item as a present, except for you deep pockets guys out there. But, how can the rest of us maneuver our way into it. I'd suggest, for those who can spend such sums without squirming, buy a pair for yourself and give your formerly held "flagship" headphones to your son, or son-in-law, or wife (heh-heh), all gift wrapped, with new foam pads. You'll score heavy "good-guy" points. No one will mind if you snuggle into your favorite chair to listen to your new GS-1000s. Failing that, buy your wife one of those extravagant gifts she's been hinting about, and strongly suggest she buy you, in return, a set of Grado's latest masterworks. If she collects jewelry, kitchen gear, cashmere sweaters, anything, she'll understand. If you are like some of us, retirees living on a fixed income, you'll have to wait until Grado allows some of his latest production tricks to trickle down to his less expensive models. And if you must, as I must, control my lust for ownership, well, our human wisdom is enriched by the understanding of Envy. I think each of us can be better people for having a touch of Envy now and then ...in small doses ...'cuz it's still a deadly Sin. But we'll understand others a bit better for having experienced it

ourselves. Been there, done that.

To recapitulate, the Grado GS-1000 headphones do everything good headphones do, and then some. They are so good they deserve some eponym, like "The Great" Grado 1K's. That is not to say they revolutionize the field: that wouldn't be John Grado's way. They incrementally raise the bar, solving some nasty problems that have deviled designers for some time now. Whereas the best of previous headphones were either too bold and brash, or too painfully polite, these 'phones can be both in turn if that's what the recording engineers deliver. The Great Grados do not make brash recordings sound polite, nor polite recordings sound brash. Have I mentioned that they are the first to give you what is on the software. And they are comfortable. They are a nominee for "Max Dudio's Product of the Year, 2006." Good job, everyone at Grado Labs. And when you rush out to buy a pair, grab your old lady and do a stately Pomp & Circumstance up to the counter, modestly slide him your Platinum Card, and remember to tell the guy, "Max Dudio sent me."

Ciao Bambini!

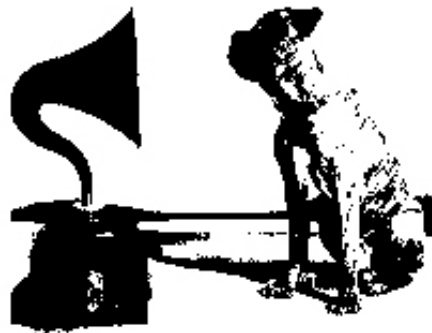
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