

An Unsung Hero of Minimalist Miking by Paul Serotsky

1. Preamble

The past is littered with lost or mislaid treasures, and obviously each such treasure, because it *is* a treasure, whether it be a lost manuscript or an unsung hero, generally causes a great stir of excitement. What is less obvious (to me, at any rate) is why the unsung hero of whom I'm about to sing has so singularly failed to cause a stir.

He came to light quite some time ago, did some admittedly modest singing on his own account, had some of his recordings favourably reviewed on MusicWeb International and elsewhere, and one of his recordings won the German Record Critics' Association's "Best Historical Recording" award of 2012. In response, the recorded music world could barely be bothered to yawn. I reckon that, to a large extent, folk missed or, more likely, misapprehended the significance of this "find"; my purpose here is to try to put that record straight.

Since our subject largely concerns recording technique, particularly in respect of symphonic music, before I take the plunge I ought to lay out a bit of background for the benefit of those readers who won't think I'm trying to teach my grandma to suck eggs. Those who are fully-qualified, egg-sucking grandmas, please feel free to skim or skip section 2.

2. How Many Microphones?

A while back, I was shaken out of a minor misconception when I belatedly discovered that multiple miking had been around a good deal *longer* than stereophonic recording. With hindsight I suppose that, in the early days of "electrical" recording, multiple miking must have been an eminently sensible idea – since, by today's standards, early microphones had all the sensitivity of elephant hide, you'd need a few simply to cover the orchestral ground. With the advent of stereo – and much more sensitive microphones – the purpose of multiplying the mikes changed. The question of "how many microphones?" quickly became a bone of contention, and a particularly gnaw-able bone it has been ever since, especially when you consider the mind-boggling numbers of microphones deployed at many sessions.

On the one hand there are those who seem to believe "the more, the better, that way we're sure to get everything" (and, I'm tempted to add, "we can sort out the mess later"); on the other there are those who believe "we should need only one microphone for each ear" (and, succumbing to further temptation I'd add, "anything that they don't pick up, we don't really need"). Is it necessary for me to add that the former far outweigh the latter, certainly in the recording business, by a factor of around a thousand to nought?

Eventually, for most recordists multiple miking – with its attendant ability to tease the finest detail into precise presence – evolved into an essential tool in the hotly competitive commercial quest for the highest of "high fidelity". Yet, there are those who doggedly believe that this is an unnecessary heap of counter-productive complication, whose "hi-fi" is electronic in nature, rather than highly faithful to the performance, and argue their case through a plethora of objections.

Some, indeed many, of these objections are perfectly valid. In particular, multiple mikes – especially when engineers, as I once put it, "play microphonic acupuncture with the body of the orchestra" – make a right old mish-mash of the phase information, which is every bit as important as volume differences to the spatial location of sound. Thus to leave spatial effects entirely at the mercy of pan-pots, which at best can only do half the job, is to do the job only half as well. Then there's the vexed issue of "spotlighting", in its many and varied manifestations, for which CBS became famous (or, rather, *infamous*) in the 1960s.

Some objections, whilst they harbour a grain (or maybe even more) of truth, are at least partially spurious. To take but one example, with all those channels at his disposal the balance engineer can twiddle his faders to set the “mix” as he sees fit – and thus has *carte blanche* to ride rough-shod over the conductor’s own finely-calculated sound-balance. Now, this *would* be true, were it not that, generally speaking, the conductor is the key arbiter involved in deciding that “mix” – that’s if he can spare the time, which he certainly *ought* to do, because if he doesn’t, then he’ll have dumped a fair bit of his interpretative preparation straight down the pan. Mind you, some conductors, succumbing to the seductions of the mixing desk, are prone to “re-think” their balances after the event, asking for this, that or the other detail to be “brought out”. Do you remember Bernstein, in the film about the recording of *West Side Story*, suggesting something of the sort regarding a particular phrase from – I think it was – the bass clarinet?

You may well ask, “But why do some people think that two-microphone recording is such a Big Deal?” In the last paragraph but one, I’ve already hinted at the answer to that, but it’s so central to this discussion that I’d better spell it out (so grandmas who *can* suck eggs, please bear with me). To keep matters within reasonable bounds, let’s ignore the aspects of human hearing that deal with “behind” and “above-below”.

Let’s start with a simple question: what *is* “hi-fi”? If you reply, “The purest possible sound,” you can go straight to the naughty-corner! “Hi-fi”, as the rest of us know well enough, means “high fidelity” – not just “high fidelity *full stop*”, but a “high degree of faithfulness *to the original sound.*” Thus, whilst the sound of recordings of today’s popular music may be very pure in quality, never in a million years can it be called “hi-fi”, because much of it, being synthesised (computer-generated), never existed as an “acoustical” sound to which the reproduction *could* be faithful. Of course, purity is a factor, but purity is just the first step towards hi-fi.

The advent of stereo added to the requisite of faithfulness to the original sound that of faithfulness to the original spatial distribution (side-to-side and front-to-back) of the original sound. To sense spatial distribution, our hearing apparatus combines two factors – *relative level* (volume) and *phase*. The former is fairly obvious: a sound originating from somewhere on the left will sound louder to the left ear, which is slightly nearer, than it does to the right ear. The latter operates similarly, but in the “time” domain: a sound originating from somewhere on the left will arrive sooner at the left ear than it does at the right ear – the time difference is generally referred to as “phase”. Either of these two dollops of information is sufficient for the ear/brain to locate the direction from which a sound is coming. So, why do we need them both?

It’s my understanding that both factors combine to “measure” distance or, if you prefer, “depth”. Things get a bit complicated here (they certainly do for me), so suffice it to say that it’s basically because there’s a unique combination of the two factors for each possible location, and with that let’s leave our ears to sort things out.

That leaves just one more point: what happens if one of the factors is missing or garbled – in other words, what happens when the phase relationships inevitably get mangled in multi-microphone, and to some extent that includes three-microphone, recording setups? Well, you still get “left-right” stereo, but the sense of depth can only be achieved by “fooling” the ears – arranging things, either deliberately or by a stroke of serendipity, so that the further back an instrument is, the more “resonant” its acoustic – in effect, the ear thinks it “sounds” further away, so further away it must be.

But, with just two microphones, placed so as to approximately represent a pair of ears, albeit on a rather large, imaginary head, your recording will retain *all* the relative level and phase information, and your recording should give a clear feeling of lateral disposition of the instruments and a *real* sense of depth.

This is all fairly basic stuff, yet it isn't often that you hear or read anyone, even those purporting to be "audiophiles", giving any thought to, or even having anything nice to say about minimalist microphony. For example, recently I read on the internet someone's comment on "two-microphone" setups, disparaging this "childish 'two ears – two microphones' nonsense". I will not sully my readers' eyes by reproducing his actual words, but such invective, when backed up by an utter absence of justification, is indicative of an all-too-prevalent, complete and wholehearted ignorance (there – now I've gone and dug my own grave!).

Obviously, the above no more than scratches at the surface of what is a very Big Subject, but it's probably enough for our present purpose. Mind you, it doesn't help that, in recent years, the issue has been complicated by some blurring of the boundary between these polar opposites. I recall in BBC Music Magazine someone who, having extolled the virtues of minimalism in microphony, finished by boasting of making a recording of a large-scale work with 'a mere' *ten* microphones." *TEN!* That's what I call stretching the definition of microphonic minimalism some way beyond breaking point, creating a minefield we'd better avoid wading into here – so, if you don't mind, let's keep the upper limit of minimalist miking at (a mere?) *two* microphones, since that's the only one that faithfully preserves phase.

As a footnote, maybe I should remind you that the above discussion of relative volume and phase applies specifically to *recording*; playback is another matter. If you listen through headphones, you will enjoy all the benefits of the phase information. If you play the recording back through loudspeakers, the phase information will be somewhat diluted due to crosstalk between the left and right channels – but, I suppose, that's still better than having none at all.

3. The Mercury Philosophy

The pioneer, and for a lot of folk the *only* exponent of microphonic minimalism was Robert Fine, whose famous "Living Presence" technique first appeared in 1951. Originally, this involved the use of a single, singularly well-placed high-quality microphone for monophonic recording. In the mid-fifties, basking in the luxury of almost unlimited resources from Mercury, Fine intensively researched the possibility of recording stereo with just two microphones . . . and *failed!*

Basically, Fine found that, once the two microphones had been placed far enough apart to resolve "left/right" stereo satisfactorily, a "hole" had *already* opened up in the middle. No matter how he juggled the parameters, he either got stereo with a hole, or mono with no hole (so to speak). The only way he could find of "plugging" this hole without sacrificing the stereo was with a third, central microphone. However, this considerably complicated the recording chain, a far-from-perfect "finger in the dyke" fix that left him a long way short of the solution he'd sought. Nevertheless, the stereo recordings he produced using this three-microphone technique caused a phenomenal stir that reverberates right down to the present day. How much more of a stir would it have caused if he *had* succeeded in his original aim?

Perhaps even more remarkably, the stereo variant of "Living Presence", in spite of using *too many* microphones, still has the microphonic minimalism field almost to itself. RCA's contemporaneous, suspiciously similar-sounding "Living Stereo" series apparently adopted an approach similar to the Mercury. However, unlike Mercury's case, information on RCA's methods is very hard to find. What I've dug up about it amounts, more or less, to this: RCA made many of these recordings using either two or three microphones. It's not a lot, is it? The "Living Stereo" recordings made with two microphones are fairly easy to spot, because of their combination of very wide left/right dispersal and rather sparsely-populated middles.

4. Two-Microphone Solutions

The Big Question remains: has anyone ever realised a genuine *two-microphone* solution that gives you a wholly "natural" sound-field, entirely without that embarrassing "empty stomach"? Well, certainly there will be very many others who have *made* two-microphone recordings, but virtually all

of these are in the amateur domain, where the use of the technique is often a matter of pragmatic necessity, due to cost and space considerations.

I myself am one such, having made some 200 CDs' worth of recordings mostly of orchestral performances, some with two microphones but also a fair few with four (one pair a few feet above and slightly behind the conductor's head, and a similar pair hung somewhat higher up). But, probably along with most other amateur recordists, I would never go so far as to make any claims for their technical merit or historical significance.

All of which brings us – at long last – to my “unsung hero”. It's very important, particularly if your impression is of Geoffrey Terry being merely a Robert Fine “copycat”, to understand from the outset that Geoffrey's work was *entirely independent of Robert Fine's*, and moreover that Geoffrey actually solved the problem that had completely defeated Robert Fine. In respect of the no more than skin-deep similarity between himself and Robert Fine, Geoffrey himself declared:

“I was completely unaware of the work of Robert Fine, until I learned of his endeavours a year or so ago [to me, he mentioned the year as being 2010], and had given no thought to there being a potential problem in recording a symphony orchestra with two microphones.”

5. So Who Is Geoffrey Terry?

If it's biography you want, please refer to this [web page](#), then scroll down to “Background Information” and read the section entitled “A personal recollection”. It's clear that, from the word “go”, Geoffrey was bright, self-motivated, determined and resourceful. His career took him from self-taught violinist, through National Service (RAF), audio engineering jobs with Philips and in film and TV studios, to running his own hi-fi, recording and concert agency businesses.

During the years working as an audio engineer, he became, to put it mildly, thoroughly disenchanted by the “standard” recording methodology. Being only a junior, he kept his trap shut and his head down, which is more than I could have done. However, he eventually came unstuck. At a session to record a solo harp, the studio manager ordered them to set up *seven* microphones around the player. Towards the session's end, he changed his mind and said that one would do. As Geoffrey worked on changing the setup, he muttered some choice remarks about this silly carry-on.

However, unbeknown to him, one of the microphones was still *live*. He was overheard, and sacked for his impudence – not that he minded; he was heartily sick of the business anyway. Nevertheless, it was the very frustration of this job that channelled and fuelled his thoughts. Motivated by an intense love of music, and dreaming of it being served well by recordings, in his own mind he gradually evolved an alternative methodology, one which he regarded as “the *right* way to do it”. The acid test would be to put it into practice; the question was: would he ever get the chance?

Geoffrey's partner in the ill-fated *Audio Transcriptions* recording business, the pianist Peter Katin, introduced him to the orchestral impresario Adolf Borsdorf, who was needing someone to record some performances by the Northern Opera Group based in Newcastle-upon-Tyne. This led to Adolf inviting Geoffrey to accompany him to Eastern Europe, where the former was negotiating UK tours for orchestras in those benighted countries. He saw the places, heard the orchestras on their home ground, and met the likes of Karel Ancerl, Vaclav Neumann and the young Kurt Masur – it must have been the trip of a lifetime. But, it didn't end there; subsequently, Geoffrey was granted the further pleasure of going with the orchestras on their UK tours.

And this was the wondrous twist of fate that gave Geoffrey his chance: “Seeing as I'm going with these orchestras, and I have a keen interest in the art of recording, would it be possible for me to record some of these concerts?” Those were not his exact words, but, cap and courage in hand, he ventured something of that ilk – and, to his surprise and delight, gained the permission that he sought.

Geoffrey's made his recordings in the late 1960s and early 1970s, and playbacks were very favourably received by many notable musicians, some of whom were frankly astonished, and all of whom acknowledged a "musicality", a rich realism in Geoffrey's efforts that was generally lacking in commercial recordings. Unfortunately, Geoffrey the businessman, for once in his life, missed an opportunity – although, strictly speaking, the recordings were purely experimental, it didn't actually cross his mind that he might seek a market for them; well, not until all of *40 years* later.

6. Terry's Technique

According to Geoffrey, the first time he prepared to make a two-microphone recording, he seemed to know *instinctively* where the two microphones should be placed. Nevertheless, he studied the hall carefully. Finally, having "shuffled his cards" for a long while, he settled on the placement he'd first thought of. This was about three metres above the front of the orchestra area, spaced symmetrically about three metres apart, and pointing vertically downwards.

Geoffrey fed the microphone outputs directly into his treasured Tandberg tape recorder, and during rehearsals set the recording levels to accommodate the loudest sound – no mixing, no equalisation, no filtering; only what the combined response curves of the microphones and recorder would deliver. During the concert, all he had to do was press "start" and "stop" at the right moments, and sit back and enjoy the music.

That sounds suspiciously similar to Robert Fine's method, doesn't it? Small wonder, then, that superficial students of the art concluded (wrongly) that Geoffrey was just a "Fine clone". After all, the only obvious differences are that Fine's microphones were strung behind, i.e. on the audience side of, the conductor and, of course, that there were three of them; to a casual observer these differences would hardly seem significant.

However, Geoffrey's guiding principle differed from Robert's. The latter wanted to capture the orchestra's sound as the *audience* would hear it, whereas the former was aiming to preserve a sound corresponding as closely as possible to the balance created by the *conductor*, on the entirely reasonable grounds that he is the *architect* of the interpretation. This was a subtle but highly significant difference – but why, then, did Geoffrey not place his microphones at the conductor's head-height?

Simply this: Geoffrey had always felt that, in commercial recordings, the sound of the strings was never adequately caught, and he was having none of *that*. Granted, even the conductor, standing much closer to the front desks, can't actually hear the back desks anything like as well as the front. However, Geoffrey believed that his objective of capturing the full string sound remained valid, because the conductor, if he was worth his salt, would have made due allowance for the deficit in what he himself could hear. For this reason, Geoffrey placed his microphones not only rather higher, but also over – and slightly in front of – the conductor.

You may be aware of Geoffrey's reasoning for this placement – that all the players' warm bodies beavering away at sending their audience into transports of ecstasy generate a column of rising air, which guides the sound upwards or, if you like, upon which the sound "hitches a ride". You can read his explanation on this [web page](#). Although Geoffrey and I are entirely in agreement about the proper placement, we have had a right old ding-dong over the "theory" behind it. He seems to hold the "rising air" phenomenon as a nigh on mystical belief, whilst my explanation is rather more prosaic. Hence, it behoves me to summarise it.

Briefly(-ish), the microphones, elevated above the orchestra, have "line of sight" on *all* the strings; the back desks are much more nearly equidistant from the microphones; and finally, whilst in the horizontal plane the "f-slots" of the different groups of higher-pitched strings, which tend to be directional, are pointing in different directions, i.e. the first violins straight at the audience, the

seconds more towards the audience's left, and the violas pretty well straight towards "stage right". However, *all* of them direct more or less equal proportions of their sound *upwards*.

Similar arguments cover the other instruments, but let's not labour the point any more than we have to, because when all's said and done it matters not which "theory" is right (or whether both are wrong); the all-important thing is that "up there" *is where you get the best vantage point for hearing the full body of string sound, and the best overall balance, all broadly as engineered by the conductor*. By a similar token, the folks up in the balcony, being higher than the orchestra, generally get a better sound balance, and quite properly pay a premium for the privilege, than the more cost-conscious folk in the stalls – and the most impecunious, suffering the comparative physical discomfort of "the gods" (in halls that have them, that is), probably get the best sound-balance of all. Ah now, *there's* a touch of poetic justice for you.

Finally, there's the small matter of that "hole in the middle". It's well enough known that Robert Fine used omnidirectional microphones, because, of all the extant microphone types, these have the highest of "fi". For a fair while, Geoffrey had me under the impression that, like Robert Fine, he also used "omnis". Consequently, I was completely flummoxed by the utter lack of the dreaded hole which by rights should have been as unavoidable in Geoffrey's two-microphone recordings as in Robert Fine's two-microphone experiments. It was only in the latter stages of our debate on "hot air" that he let it slip that he'd used AKG D19 (or sometimes D24) microphones – which are not omnidirectional but *cardioid*.

Ah, now, *that* makes *all* the difference. As the name implies, the polar response of an omnidirectional microphone is "spherical", i.e. it "hears" equally in all directions. A cardioid, on the other hand, "hears" very little behind and to the side, whilst the response rises quickly as you go round the front. This gives it a slight forward "shoulder", that crucial bit more sensitivity in the central "overlap" area between the two microphones, so that a satisfactory stereo spread can be achieved comfortably well *before* the hole in the middle appears. I haven't dared to ask Geoffrey whether he deliberately *chose* those microphones for this particular reason, or just went for them "instinctively". Regardless, as with the microphone placement, cardioids were the right choice, and that is all that really matters.

7. The Recordings

Eventually, Geoffrey the businessman did take advantage of his golden opportunity, as witness the small but not insubstantial catalogue of the *Orchestral Concert CDs* label, his somewhat belated attempt to "seek a market" for these extraordinary recordings. Actually, his primary aim was more altruistic: to try to ensure that his recordings – treasured by him, but also of possible interest to posterity – didn't just disappear after he himself had done so. With a dainty touch of artistic licence, Geoffrey has included in the fifteen "Orchestral Concert CDs" two discs of chamber music and one of a solo piano recital.

All these recordings are of genuinely "live" performances. By "genuinely" I mean that this is *exactly* what they are – unlike many of today's so-called "live recordings", which are effectively patchwork quilts created from the best bits snipped from several successive performances, possibly in different venues, possibly with some "studio shots" to supplant otherwise wholly unsatisfactory moments. With Geoffrey's, what you hear is, I believe, the nearest you can get in a recording to the "real deal".

Being just an ordinary bloke, he didn't have the backing of a record company, so the standard of Geoffrey's equipment is closer to "high end" domestic than commercial recording kit. Although he appreciated the fine qualities of tape recorders such as Revox, Studer and Ferrograph (names to conjure with nowadays) his preferred machine was a Tandberg quarter-track, running at 7.5 ips, which, as he said, "for me was more like a *musical instrument*". About his microphones, AKG D19s and D24s, need I say more than that they are now the stuff of legend?

Here is not the place to review the recordings, particularly when you consider the lengths of my reviews, but I should offer you a few words of warning. There are a fair number of reviews of OCCDs already out there on the web. Practically all reviewers respond very favourably to the sound quality, but not many of them even attempt to explain it. Those who do explain tend to do so in terms of “standard” miking practices – for example, “. . . with canny and practised microphone placement this recording captures fidelity without undue spotlighting”. The one I found who did seem to have some idea what was going on, blew it when he ended up, not “clinching the deal”, but completely missing the point by equating Geoffrey’s methodology with Robert Fine’s. Finally there’s this one, from a reviewer who, if his words are to be believed, witnessed the actual recording session:

“The booklet makes some rather odd claims about the recording techniques used; hence the engineer’s assertion that: ‘. . . this recording was made using just two microphones . . .’ Quite clearly this is not the case – *‘spot’ microphones are in place for solos, and strings sections are balanced and placed in the stereo image* [my italics].” Perhaps a touch of circumspection wouldn’t have gone amiss, here?

This chap also said, “The chopped reverberation at the end of the movement is little short of criminal – and inexplicable.” Hmm. Inexplicable it isn’t, not if you check the recording venue, emblazoned upon the CD booklet: “Royal Festival Hall, March 1968”. If my memory serves me aright, the RFH did a pretty fair job of chopping its own reverberation. So, maybe it’s as well for readers to be critical of the critics.

A few general comments from me, however, are in order:

The quality of the sound is simply spine-tingling, beguilingly warm yet clear, smooth – and oh, so spacious; so real and natural are the perspectives that it *is* almost like having the orchestra itself arrayed before your mind’s eye (and ear) – it’s tempting to say (so I will), even more a living presence than Mercury’s “Living Presence”. Instruments are not only “located”, but also feel truly integral to the body of the orchestra. And yes, the string sound *does* have a special sheen, something of that luscious rosy feel that you hear in the concert hall, but which, other than through Terry’s Technique, never seems to find its way onto records (and you might well wonder, “Why not?”). Now, *this* sort of “minimalism” is right up my street.

However, nothing is ever perfect – so sweetness and light don’t have it quite all their own way. Listening through headphones, I was conscious that orchestral woodwind seemed to be spread most of the way across the platform. This is primarily a consequence of listening from the conductor’s perspective. Similarly, in a piano trio recording, the piano is on the extreme left and the violin and cello on the extreme right (surely they were not really so far apart?), whilst in a solo piano recording it’s almost as though each individual piano key has its own allotted spatial position, pointedly reminding me of Jesper Buhl’s confessed predilection for “jumbo piano images” in his Danacord concerto recordings. Finally, standing soloists, such as singers and violinists, seem to move around rather a lot; a consequence, I’d suggest, of them swaying or – especially singers – turning to address different areas of the audience.

Taken together, these “symptoms” lead me tentatively to suggest a possible cause. As far as I’m aware, Geoffrey used exactly the same configuration for all these recordings, so maybe, in pursuit of a decent stereo “spread”, the microphones were actually spaced a bit too widely. In fact, it’s entirely possible that the “best” microphone spacing might be a “moveable feast” – the microphone spacing could well vary inversely with the size (extent) of the musical forces being recorded.

It’s about here that I should tie up a loose end. Earlier, I mentioned that Geoffrey’s recording venture was strictly “experimental” – which it was, because he specifically wanted to *test* a long-cherished idea. Having proved his pudding and obtained a spectacular result, a vindicated (and overjoyed) Geoffrey left it at that and moved on. However, those “symptoms” are not faults, but an integral part

of the results emerging from the experiment. Logically, further investigations should be undertaken (possibly of ideas like those I suggested), with a view to pinning down their causes and refining the technique for general use. Now, wouldn't it be so, so *interesting* if – preferably quite soon – someone were to pick up Geoffrey's ball and run with it? It might even manage to cause a stir.

When the recordings were first published, Geoffrey's mastering standards were rather strict, in that he insisted that the recordings should be digitally mastered to sound *exactly* like the tapes – nothing added, nothing taken away. This meant that listeners would have to get used to a certain amount of tape hiss as a backdrop to the inevitable audience noises. Latterly, in some cases, he has permitted a small amount of noise reduction to ameliorate the hiss, and the removal of some extraneous noises, subject to a modified condition, namely that there must be no *perceptible* detriment to the special qualities of the recordings.

Admittedly, there are a few tape dropouts, but not many when you consider the ages of the master tapes, and certainly nowhere near enough to discourage any determined listener. Incidentally, using audio editing techniques that are commonplace now, but hadn't been invented back in the 70s, many of these dropouts could be rendered much less perceptible, without violating Geoffrey's condition. I've experimented with fixing a few, and had what sounds to me like a fair degree of success.

Finally, what of the music itself? Well, there's plenty to tempt the curious, and an interesting line-up of performers. To a great extent, it all adds up to an intriguing "snapshot of an era", a time when many fine Eastern European performers began to feature strongly on British concert platforms. Regardless of the microphone technique, that in itself makes Geoffrey's mini-catalogue of recordings something to savour.

You don't have to take my word for it. If you just want to dip your toes tentatively, you could have a nibble at the free [sampler](#) that Geoffrey's made available for download. If you do, allow for the fact that the files are only MP3 at a modest 124-182 kbps. On the other hand, if you fancy diving in for a right old wallow, have a browse at this [MusicWeb International page](#), where you'll find details of all fifteen recordings – offered for sale (for a limited time) at rather attractive prices to anyone interested in buying a very tasty slice of hi-fi recording history.