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A Wee Dram of Scotch: Linn Products' Ivor Tiefenbrun

John Atkinson & Robert Harley, October, 1994

More than 20 years ago, when the turntable was considered a perfectly neutral component in the playback chain, Ivor Tiefenbrun single-handedly demonstrated to the world that the turntable was not only an important part of a hi-fi system, but perhaps the most *important part. That radical idea was the basis for the legendary Linn Sondek LP12 turntable, the product that launched Linn, and which is still in production 22 years later.*

Ivor also had some unconventional ideas about music reproduction and what a hi-fi system should do—ideas often at odds with the traditional view of "high-end" audio. His message was so powerful and influential that Linn began to be seen almost as a cult. Cult or not, Ivor's company, Linn Products, grew from its tiny beginning to being one of the largest hi-fi companies in the UK, and Ivor was recently made a Member of the British Empire, an official honor, by Her Majesty the Queen.

We had the opportunity to spend some time with Ivor during separate trips we made in 1992 and 1993 to Linn's unique factory in Scotland, and also on a visit he made to Santa Fe last February on his way to the official opening of the Linn store in Chicago (footnote 1). Ivor is outspoken, irreverent, highly opinionated, a brilliant and original thinker, and one of the most fascinating conversationalists either of us has met.

Robert Harley: Why did you enter the hi-fi business with, of all things, a turntable?

Ivor Tiefenbrun: Well, like everything in life, it was an accident. When I grew up, we had a hi-fi system in our home. My dad was a hi-fi enthusiast. When I got married it was natural to put a hi-fi very near the top of my list of things I needed.

I rented a two-ring gas cooker for a fiver just to do until we bought one, and bought a clothesrack to hang my clothes on. We moved into a completely empty house without a stick of furniture. I went out and bought a hi-fi system that cost the price of a good small car. My wife was utterly appalled. She said, "We don't have any chairs to sit on." I said, "We don't need any chairs. We've got all we need—we've got music." You can do lots of things to music: you can dance, make love, relax—you have a bed, you have a floor. If we had to start again, we'd do the same thing.

But, inevitably, I discovered that the system wasn't as good as I thought it should be. It didn't compare with the system my father had. I noticed—I wasn't trying to notice—that if I listened through headphones with the speakers on and the speakers off, it would change the sound. I thought that was ridiculous—it meant that the turntable was being affected by the output of the loudspeakers. So I put the turntable outside the door and confirmed that that was the case. I thought this was nonsense. It was that feedback aspect of the turntable's performance that made me decide I would build my own.

Because I worked in my late father's engineering company, I had the ability to make a turntable. It was a tremendously well-equipped shop—still is. And so I made a turntable. I didn't have a wow & flutter meter, so I had someone measure it for me. He told me he'd never seen anything as good.

When I took it home and listened to it, it sounded much the same as the turntable I had. I thought I was missing something. I went to a man by the name of Jim Kerr and

told him that I wanted to see how they make records. He had worked for Decca off and on for many, many years and had actually built my father's system. Although I knew how records were made, it was only when I actually looked at the process that I realized that the scale of the problem was beyond solution. The amount of information on a record pretty much guaranteed that it would be forever irretrievable.

Jim told me that the bearing system I was using wasn't good enough. He suggested the [single-point] bearing design that we still use in the LP12.

I slowly came to grips with other issues. I discovered that the recording process was a closed process. In other words, all relative movement between the cutter, the stylus, and the acetate [master] surface will leave its imprint on the acetate. So the playback process was open to an infinite scope for loss. I then started a long process of screwing about with turntables.

I foolishly assumed that if the thing measured better, it should sound better. I also assumed that if it didn't sound any better, there was no point in buying it. But I worked on the basis that you have to get more information off the record, and make the turntable immune to feedback. That was very different from the view that persisted at that time in the hi-fi industry. I ended up with a turntable that would improve the sound of any hi-fi system—which I thought was the minimum objective.

I discovered that people were very reluctant to believe that that was possible. I thought that once people saw that it was possible, it would incite them. It incited a kind of resistance rather than enthusiasm. [*laughs*]

Footnote 1: See "Industry Update," April '94 (Vol.17 No.4, p.37).—**JA**

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John Atkinson: The resistance was quite violent, as I remember.

Tiefenbrun: People felt I was some kind of charlatan. The funny thing is that most marginal, or even nonexistent, improvements were welcomed, and yet here was a very large one that was easily demonstrable. But people actually didn't even want to listen. When they did, of course, they were flabbergasted.

It seemed obvious to me that the quality of the input signal was crucial in the performance of the total system, and that getting information off the record was substantially the task of the turntable; it was a platform for both the record and the arm and cartridge combination. But the view then was that turntables would just go 'round and 'round and not add any noise. And that is, of course, true. But it wasn't that that view was wrong, it was just that it was narrowly interpreted. Sometimes knowledge is used to shut out other ideas.

People have said to me that turntables can't alter the sound because all they do is go 'round and 'round. I would say, "Well, my speakers just go in and out."

It was seen that what I was doing with the turntable was a kind of assault on the loudspeaker. When we got into speakers, we made the beginning and the end of the chain. I felt that by doing so I could show people that I wasn't somehow prejudiced against loudspeakers.

But going back to your question about the turntable: I took it to shops, knocked on the door, and asked if they wanted to listen to it. Most people told me it made no difference and so they didn't listen. Some said they would. Most heard a difference. Some thought it important, some didn't. And some said, "That's real exciting—how can we sell a thing like this?" And I said, "The same way I'm selling it to you. Play it for the people and let them hear for themselves what it does, and let them decide if it's worth it to them. Let them decide whether we deliver the performance."

So one thing led to the other. It was a series of accidents.

Atkinson: Was the resistance to the idea of turntables having an influence on sound quality greater in the US than in the UK?

Tiefenbrun: I don't think it was much different. I fought all these early credibility factors mainly in the United Kingdom. In America, there were people who discovered it for themselves—the people who were interested.

I also learned that there was no point in trying to teach them—they had to listen for themselves. They would either notice, or they wouldn't. That was a much more effective way of handling it than telling people this is going to change the science because it's going to get more information off the record. It's going to be virtually immune to transient feedback—which makes the amplifier's task easier.

Atkinson: With hindsight, if you look at those days—the late '70s—you were accused of almost forming a cult, particularly in combination with [Naim Audio founder] Julian Vereker. Such was the power of the idea you were selling.

Tiefenbrun: It was a good three years after I'd been in business before I met people like Julian. I think other people made Linn a cult. I never did anything that would make it a cult. My behavior—which was much misreported, I must tell you—was always very straightforward, but contrasted with what people expected from a hi-fi manufacturer. To me, hi-fi is about engineering, and that's about making things work and about the application of measurement.

Atkinson: You had an idea back then that you wanted to do more than build turntables?

Tiefenbrun: I wanted to build a hi-fi company. I wanted to make things. I believe that people in countries like Britain should make things. I'm part of the culture that says you are what you do. The thing goes back to Socrates.

Atkinson: Both Bob and I have been around your factory, and you've obviously applied a lot of thought to *how* to make things. You make things rather differently than other consumer-electronics companies.

Tiefenbrun: When we first started the idea of single-station build (footnote 2), people thought we were completely ga-ga. But it's now been widely adopted.

The original production-line concept employed scarce skilled resources at each stage in the line. But then the process became less and less skilled, and the cycle time became shorter and shorter.

Because the process is completely de-skilled, it has no merit whatsoever. The logic of that whole process is to make the people do almost nothing. What we do is the complete opposite of that. Instead of using the people as machines, or using people to feed the machines, we use machines to serve the people. We use the people at the highest possible level. And rather than trying to take skill *out* of the job, we are always looking for ways to put skill *into* it. We want to build more value into the product rather than strip out cost. You can't do that on a production line.

If you have a product that one person can build, it means that another person can service it. A product designed for the production line is not necessarily a product that can be easily serviced in the field. We can support our existing customers, upgrade the products, and keep on improving their systems—if and when they want to—because of the way we design and build our products.

There's nothing, no matter how complex, that can't be improved by a few minutes'

care and attention to detail. If one person builds a product from start to finish and they listen to it, test it, and put their name on the back— and if it goes back to them to be repaired or serviced or upgraded if anything goes wrong with it—then they can see a connection between what they do and how the product performs. Occasionally, that process will result in us discovering something we would never have learned by any other method. No design engineer would have found it. No salesman or service or production engineer could have discovered it.

Harley: Linn has a strong emphasis on making products that are fully upgradeable.

Tiefenbrun: Well, I had two basic views when I started in the business. The first one was that I didn't want to do anything remotely like anything I'd experienced elsewhere. I wanted it be a company where I could be happy working for it in any capacity. Secondly, I wanted to treat the customers the way I would like to be treated myself. I felt that every component in the product should be screw-replaceable so that it could be serviced in the field, and so that we could improve it over time as our expertise increased. That meant a customer could benefit, if he wished, from improvements we had made. That was considered pretty way-out then. But of course nowadays, more and more companies are beginning to think in that way. To me, it's bad engineering to waste things.

Atkinson: I can't think of many 21-year-old products that, if you it took to the dealer, could be brought up to current production standards the way the LP12 can.

Tiefenbrun: That's true. And I must say that sometimes it's fucking hard to do. I mean, there were times when a supplier would change something, which meant that we couldn't make the product unless we compromised performance. And a few times, because we refused to do that, we jeopardized the whole company.

There was one point where we didn't make anything for two and a half months because we couldn't solve a problem with motors. Eventually, I managed to persuade the supplier—I think I bought a couple thousand motors a year from them at that time—that they should change their motors to accommodate us.

Nevertheless, it takes a big overhead to maintain that backwards compatibility. And sometimes it nearly killed us. But being Scotsmen, we "die in perfect squares." We never take a step backward. We never wavered from that ideal of making the products upgradeable in the field.

Footnote 2: See "Industry Update," February '94 (Vol.17 No.2, pp.42-43) for a description of how each Linn product is assembled from start to finish by one person, rather than on an assembly line. The article also includes a description of Linn's highly advanced factory in Scotland.—**RH**

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Harley: You were talking earlier about having a relationship with the customer rather than just making a sale. Was the upgradeability part of that?

Tiefenbrun: As I always say, it's the relationship that matters, not the sale. I don't believe there's any virtue in selling something to somebody when it doesn't meet any customer requirement. I never felt comfortable with the notion that people should buy our product without knowing actually *why* they bought it. In other words, personal experience.

I said from the beginning that we want a thrilled customer, not a happy one. We want him to be over the moon about the product. Because that's the only way that we, as a whole, can build a business. We rely on the customer's word of mouth to build the business.

We're not into the marginal advantages. We wanted an *unarguable* advantage, so it was *absolutely* clear to a customer whether they should buy this product or not. We've always felt that.

Harley: The conventional wisdom is that a quality hi-fi system gets about 96% of the way toward live music. You think it gets about 2% of the way.

Tiefenbrun: I've always said that we get 1% or 2% of the music off the recording. That sounds strange when people are told in the newspapers that they get perfection for $99 or something. It also seems to colleagues in the industry that this is putting the business down.

But if we were getting 99% of it, I think I'd have moved on to something else already. First of all, there'd be no real challenge or interest. Secondly, the perception that hi-fi follows the law of diminishing returns for increasing costs would actually be true. But it *isn't* true. The more you spend, the *bigger the differences*, and the more significant the benefit should become.

That's true because we actually achieve so little of what we set out to do. That gives us all a lot to work for. It doesn't diminish the value of what we can offer at this moment in time. When I go and listen to a system that I thought was good 20 years ago, *I laugh now*. I'm not saying that it was a joke, but I'm surprised that we were so excited by what we were achieving then. I'm quite sure that in 20 years' time, if I'm still around, we'll be surprised that we thought so highly of what we're achieving today. There's enormous possibility to increase the quality of reproduced music at home.

Atkinson: How do you cope, as a manufacturer, with selling an FM tuner [the Kremlin] that costs ten times what the average man or woman in the street expects to pay for a radio, when they've bought into the idea of perfect sound for $99?

Tiefenbrun: The first thing is you have to apologize, because we don't deliver perfect sound for $99—although that is obviously the objective.

I don't subscribe to the view that the cost of the equipment in some way has to be expensive so that we differentiate ourselves with price. There is a school for that in the fashion business, but I'm not interested in it. The fact is, it just costs us a lot of money to produce a tuner like the Kremlin. I wish it was a fraction of the cost. I believe it's the finest product that we make, actually—a sensational product. But, like the LP12, until you actually experience it, you have no understanding of what it'll do or the impact it will have.

The best route to quality music at home is a live stereo FM broadcast. It's really superb—totally involving. To me, a hi-fi system is a mechanism to explore and discover the world of music. And the radio is a beautiful way to do that. It's a free, cheap way to discover the joys of music. That's the miracle of hi-fi.

Doug Sax (footnote 3) once said to me that, a hundred years ago, a great new Brahms symphony would have been performed once for Franz Josef; and, typically, four years later, the second performance would have been for Queen Victoria in London; and five years later, it would have been performed once in Berlin for the Kaiser, and then the piece wouldn't have been played again for another 30 or 40 years. And yet today we take it for granted that we can access virtually the entire vocabulary of the world's music on our record player, in our own homes. That's what hi-fi is to me: It's a key to the world of music.

Atkinson: But how do you convince people that it's worth paying for good sound and good engineering?

Tiefenbrun: What *is* good engineering? I don't believe that tight budget limits reduce the merit of the product. If you've no price constraints in the design of an amplifier, and you can use whatever transformer you want, whatever the size and whatever

kind of power supply, then nothing matters. If you have a tight financial constraint, and you recognize that your customers don't have infinite resources, then that forces you to define what the power supply does, how it works, and develop enough understanding to design a power supply that does what is required in that product.

I don't believe that value engineering—or cost constraints, or brutal, rigorous price targets—are in any way counter to engineering aspirations. Now, it doesn't feel like that when you're the engineer at the cutting edge. But afterward, once you've done the work, you've learned something.

The biggest factor in the price of a product is the volume. Basically, every time you double the volume, you can expect to reduce the cost by about 20%. So the argument for low-volume, exclusive manufacture is a self-defeating one. You can't deliver the kind of product performance and value that customers would want.

I don't subscribe to the view that the high-fidelity industry is a kind of Luddite craft activity. There's no future in that. It doesn't represent good value. What our customers want, above all, from us is that we're going to be around in the future to look after them and support their systems. To do that, we have to deliver ever-more-compatible, better-sounding, easier-to-use, more reliable, and more attractive products. The mechanism to do that is to learn more ourselves, and to benefit from other people's improved knowledge and expertise by employing the latest and highest-advanced technologies and manufacturing aids. It's not a question of sitting there polishing the stone for another ten years.

Footnote 3: Doug Sax is co-founder (with Lincoln Mayorga) of Sheffield Lab, and the father of the modern direct-to-disc recording. See my interview with him in December 1993 (Vol.12 No.10) as well as his CD article.—**RH**

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Harley: What do you consider important in music reproduction?

Tiefenbrun: Oh, God. That's a great question. The cop-out answer is to say "fidelity."

Music is an international language of feeling and emotion. And all people respond to music in the same way—hard as that is to believe. To me, what's important is to communicate the emotional message. A hi-fi system above a certain threshold can begin to do that, and enable the listener to respond to the merits of a performance and the message of the composer. That's the goal.

Music does so many things, doesn't it? It's therapeutic, educational, stimulating—it changes your mood. I think it's essential for human well-being.

I don't regard being in the hi-fi industry as merely being in the entertainment business. Music at home or anywhere can be entertaining, but it can be more than that—and often *is* more than that. To exist, we probably only need water and food, but for human well-being we need even more. We need shelter, we need clothes, we need sex, we need love, we need music, we need song, we need to dance. And we need a wee dram occasionally!

Harley: You have some strong ideas about how hi-fi should be sold. What's wrong

with the way it's sold now?

Tiefenbrun: I don't think there's much wrong with the way hi-fi's sold now in the sense that the people who sell it and the people who buy it are quite happy with that program. But hi-fi is falling down people's lists of priorities. Our customers are changing, and we recognize that the world has changed from the time of the classic enthusiast hobbyist like myself 20 years ago. There are more products and more issues competing for those individuals' attention.

That traditional kind of approach is inadequate to sustain growth in our industry. And retailers who want to build a business, or who want to grow with their customers, have got to meet their changing requirements.

The retailer expertise, in my view, should relate far more to criteria for stock selection, standards of demonstration, installation expertise, and service and support. And also the ability to interface a hi-fi system with other existing and imagined technologies, whether it's Home Theater, multi-room, home automation, multimedia, computing, home recording, synthesizing, music synthesis, and so on. Forward-looking retailers will recognize that.

The retailer is missing out on what he, uniquely, can offer. And that is to understand his community—know how they live, be familiar with the type of homes, construction methods, acoustics, lifestyle, and so on. If the retailer is prepared with real installation expertise, he's prepared to go to a customer's home and spend the time required to find the best position for the loudspeakers, make sure that they're not rocking, secure the cable connections, make sure the solder joints are done to a high standard, and then hide and disguise the cables. That kind of expertise is undervalued.

The customer is going to get a result that's far superior to the result they'll get from another retailer. The better the systems become, the more crucial system setup is. If the retailer doesn't have the expertise, or know how to effectively judge the system's performance, he can't optimize it. I see that as a big challenge for our industry. That's why we've committed so much resource to retailer training and education.

Atkinson: A lot of what you're saying appears to be common sense. But if a retailer can't compete on price, he has to be able to show that he adds value to what he's selling. It seems awkward, your having to go to so much trouble training people in this kind of attitude.

Tiefenbrun: I don't think we're training them in attitudes. I think we're training them how to judge the system, how to adjust the system, and how to set the system up. How to configure it. How to position it in the customer's home. How to interface with other technologies.

If no one trains the retailer, he'll have no knowledge of that, because the bulk of products are manufactured not for delivery, but for collection *in a box*. Now, in my view, that's utterly inconsistent with maintaining a high standard for everything that we do. Ultimately, what matters is the delivered, installed performance in the customer's home. The only way we can be sure that we're meeting the standards that we apply to other aspects of our business is to manage the circumstances that determine how it's used in the customer's home. That will become more and more crucial.

Atkinson: Perhaps some retailers will say, yes, they'll do that for very expensive sales; but why should we do it for someone buying their very first system?

Tiefenbrun: I say treat the customer the way you want to be treated yourself. What does that mean? Treat everyone like a millionaire. Because if you buy a Linn, we don't have second-class customers. We don't make a range of products. In every product category, we make the best product we can. And we also make an entry-level product that has the key attributes of the top-performing product, with the ability to expand the functionality so that, even if a customer buys an entry-level product, he can expand it, and build up from that position to the very best.

We've escaped from the traditional "range" view. In the traditional setup, you go into the shop and the shop qualifies you and sells the middle-of-the-range preamp, the middle-of-the-range power amp, the middle-of-the-range cassette deck—whatever.

Then, the next time you come into the shop, both parties are kind of embarrassed and uncomfortable. What happens now?

Whereas if you buy a Linn product, such as the Magik I control amplifier, the next time you come into the shop it should be to add more processing controls, functionality, or a room control unit. Or you might want a tuner module. Or you might want to deliver the sound from that system to four other rooms, or use that product in your bedroom and access your main system downstairs, and switch on your video recorder from your bed when you're watching television. We've escaped this range confusion, which is the bane of everyone's life.

A lot of people have a very extreme view that we're selling out—that we're more interested in mid-fi and price. If that's the case, we sold out before we started. There's no significant change in what we are trying to do. It's that we think our customers are changing, and we have to adapt to their changing needs.