Bill Terry Interview 3, November 17, 1995

KIRBY: This is Dave Kirby. I'm conducting a third interview with Bill Terry. Today's date is November 17, 1995, and we are in HP's offices at 1501 Page Mill Road, Palo Alto. Bill, you mentioned to me there's a couple of things from our last interview that need to be clarified so why don't you bring 'em up, if you can.

TERRY: Dave, we were talking the reps in the old days and I was kinda doing a geographical tour, and I got to Florida and I said the rep's name was Art Meyers, and that's not correct: his name was Art Lynch. It was Arthur Lynch & Associates, was the name of the firm.

TERRY: I think I got confused because he was in Ft. Meyer, over on the West Coast, 'cuz he liked to live there; he had a boat there. But he was the head of that rep firm. He had a lieutenant named Gene Dashiell who was around a long time and then he was later joined by Gene Stiles from Chicago-Crossley, who became the operating head of the HP unit in Florida at the time. So that was the famous Art Lynch! He was really a character! He was the guy I told you that was reported to be flying across Florida in his private airplane with a bottle of bourbon between his knees. The other one you asked me about that I was fuzzy on was the Colorado Springs Division, when I was a division manager and then when I left there, the ... well, no, I'm sorry. Let me back up... is when Stan Selby was the division manager and I was the marketing manager and when Stan took sick, I became the division manager and I had to replace myself, and I looked around at candidates in the field—particularly the field..for the marketing job for the field sales organization, and Hal Edmondson, who had been the manufacturing manager and an old-timer in HP manufacturing, came to me and said he really would like to take a try at being the marketing manager and I became convinced that would be a good idea. So Hal replaced me as the marketing manager there. Don Howard was the engineering manager. A fella named Bob Johnson became the manufacturing manager. And Hal did a good job in marketing; he learned fast and then when I moved on, Hal replaced me as the division manager in the Springs.

KIRBY: That's right. Okay, speaking of the Springs, at that time, I guess it's still true today, Tektronix had a dominant in the oscilloscope market.

TERRY: Yeah, they had 60, 70% of the market.

KIRBY: Well, my question is while you were GM, did our HP scopes make much headway against Tektronix?

TERRY: Yeah, we made some headway. We had some real innovations. The 180 was the first high frequency, rectangular tube, nice and bright, portable, solid state scope. I was told years later by people who worked at Tektronix that this thing really shook them up. They were really concerned about their position and our variable persistence scope—the 141 it was called—had some really unique advantages compared to Tektronix' bi-stable so, yeah, we did make some progress and we grew but the darn problem was that we would maybe gain a little market-share on Tektronix, two or three points at best, and they would just turn right around and imitate or do an encore on what we did and then we would kinda fall back. It's the problem of out of the entrenched leader, who was spending, oh, at least ten times as much as we were on R & D in scopes, and the little guy that was trying to make some progress—the Hewlett business about attacking a fortified hill—came along much later. But Bill and Dave were interested in those days about attacking a fortified hill, so we'd make a little progress on the fortified hill but the other guy would sorta come back! So it was a tough ... always has been a tough sledding. I'm always reminded what it must feel like when you're an HP competitor in area where HP has got 80% of the market.

KIRBY: Yep. Along those lines, Bill, I've never been in the IBM in San Jose, but years ago I heard that just about every oscilloscope in the plant came from Tektronix.

TERRY: Yes, that's true.

KIRBY: That would indicate that as a purchasing policy, IBM would settle on a single supplier of a product or perhaps only a couple of suppliers. If that's the case, how do you break into a situation like that?

TERRY: Well, you know, IBM is a good example. I think they were, without a doubt, the world's largest purchaser of oscilloscopes, probably even larger than the U.S. military, and Tektronix had done a really good job for a long time, both with their products and with catering to IBM's particular needs. So, yeah, each one of those IBM plants was just loaded with Tek scopes. We got in to IBM in several different places, in several different ways. The biggest way we got in was with the sampling scopes, the 185 sampling scope. This occurred while I was the marketing manager in the Springs, not when I was the division manager. This was an innovation started in HP labs—Barney was very much involved in it—and it allowed a user to view high frequency signals via a technique called sampling, where you took pieces of the signal and then you reconstructed it to see the actual signal. And at the time, IBM was working on several very large, very high speed (for those days) computers. One was called the "Stretch"—it's famous in the lores of computers in Poughkeepsie, New York—and they had some real problems because they were trying to move these high frequency signals all over the wires and back-planes of this big computer, and they were getting all kinds of interference and problems, and the Tek scopes had a band width of approximately 30 megahertz (mcs) and the 185 sampling scope could be signal up a 1000 mcs, so it was a big change! Now, you needed a repetitive signal but the signals in this computer were quite repetitive. We took this... IBM knew what we were doing. We took this product off to a trade show, in New York. The IBM engineers were so anxious to figure out what was going on in their computer that they asked us to lend them this scope overnight.

KIRBY: Oh!

TERRY: So we set the scope up in a hotel room and they brought in a bunch of prototypes and power supplies, and they stayed up all night long using this scope to debug these particular computer boards. And they were absolutely ecstatic about the kinds of signals and interference they could see. So we sold IBM—gosh! Memory fades—hundreds of these 185 sampling scopes...

KIRBY: I'll be darned...

TERRY: ...because they needed to see these signals and they needed this kind of measurement and Tektronix didn't have it. And that's the only way we ever got in to IBM is when we had something that Tektronix didn't have.

TERRY: So we sold them some of our 180s—Tek didn't have that. We sold 'em quite a few of our variable persistence scopes and it goes for selling them a lot of other test equipment—spectrum analyzers and the like. But, yeah, once they got.... It wasn't a standardization in a corporate sense, more than just a preference. Their engineers liked Tektronix scopes! They worked good, they were used to them and they weren't willing to change unless there was something else that did something they needed to do, and so we got in with these other models in other kinds of ways. HP labs made a significant contribution in that area and they, the people at the labs, were really always very, very interested in trying to help out the HP scope business. One product I might tell you about that they developed was a TV monitor. HP had made monitoring equipment for radio and TV stations for a long, long time. Back in the annals of the products, you'll find some monitoring equipment—probably in the late '50s—when FM radio started spreading around the United States. So there was of kind of a modest interest in equipment for radio stations, but it never really went anywhere. There were a couple of products that appealed to radio stations. It was a limited market; it was hard to sell to. But some people here in HP labs got an idea about making a television monitor which had a very special high speed, bright cathode ray tube and the problem was in the television signal, even today, in between the frames, there's a series of test signals transmitted: one of 'em was called the vertical interval test signal. And if you take your TV set today and you roll the picture, you'll see some funny looking lines in between the picture frames. Those are test signals that are being transmitted. People wanted to look at this vertical interval test signal and there were certain parts of it that were very difficult to look at. It was essentially a burst of high frequency energy but they wanted to see it 'cuz it would tell 'em a lot about the quality of the transmission system. Anyway, the product was invented here at HP labs. It was transferred out to the Springs; a very high speed, high brightness cathode ray tube was developed. When I became ... when I went out there and became the marketing manager, this product was within about 6 months of introduction and it had been developed with a lot of cooperation with Bell labs, who was, who were the drivers of the Bell system technology and a lot of these were going to go into the Bell system because they were the ones who were transmitting the video around the United States. And we figured out that this thing was gonna cost us about, oh, $1,500 or so to manufacture and that meant that we were gonna have to charge, oh, $2,000-52,500 for it, and I got involved in this thing and went back and started talking to some people at Bell labs and started to tell them that this was such a wonderful machine that would do what they want and for only $3,000 it was gonna be very appealing to them. Well, they announced to me that I was 'way off base. That this product was probably worth less than $1,000 to them and it was better but it was only incrementally better than the product that they were currently using, which was manufactured by a company called Harrison Laboratories, which later HP acquired, so it was kind of a first generation TV monitor and we had this really sexy second generation monitor and the mistake is made—and this has happened later in HP's life—is we kind of forgot what the market value was as we went enthusiastically inventing a solution to this problem. So I came home and announced this to Stan Selby, and I remember Dave Packard somehow got in the act because our temptation was to just drop the project. If we couldn't make any money on this thing, that we had invented a way to an elegant solution to the problem, and, of course, the people in HP labs were very upset that their idea wasn't going to see the light of day and Dave Packard told us he thought we ought to go ahead and do it anyway; it was a good contribution. We weren't going to lose very much money on it. As it turned out, we about broke even on it. So we went ahead and we developed this thing and we sold quite a few of them to the Bell system, but it was a little bit of a drag and it was a good lesson about, besides meeting customers' perceived needs, you need to really understand what their monetary value is for solving this problem, at least a kind of a ballpark! It took us a while to get over that.

KIRBY: Okay. As general manager in Colorado Springs, who were your principal contacts in Palo Alto?

TERRY: I think my boss was Ralph Lee; I'm positive of that. The reason I remember that, Dave, that Ralph used to come and see me fairly often. Ralph used to call me up and say—I remember at least on one occasion when Ralph would call me up and say—"I want to come out and see you and talk about things and review" and so forth, and he might have something special on his mind and he said, "I'm coming out tonight and I want to get started early tomorrow morning." And I said something to Ralph, I said, "Well, how early do you want to get started?" And Ralph said, "Well, I want to get started early." And I said, "How about 5:00 am.?" Sort of challenging him, and Ralph says, "Fine! Five am."

KIRBY: Did he really?

TERRY: Right! So, 5:00 am., there's me and the staff...

KIRBY: That'll teach you!!

TERRY: ...sitting in the ... yeah, that'll teach me to be a smart alec! And there's ... you know, it's dark outside in the winter time and there's old Ralph and we're started at 5:00 am. I think that only happened once. Ralph and I used to laugh about that. I think we started at 7 after that.

KIRBY: It was a challenge.

TERRY: It was a challenge. Yeah, Ralph was the boss and he was a good boss. I learned a lot from Ralph. He was a pretty broad-gauged guy; he knew a lot about a lot of things. He was good management person.

KIRBY: Did a lot of other divisions report to Ralph?

TERRY: I can't remember exactly, Dave. I think they did. I don't remember how Ralph and Porter and how the duties were actually divided up in those days, but Ralph, I know, had been close to Stan. He knew Stan, of course, quite well coming up from manufacturing but I believe Ralph was the boss of all the divisions, if not most of them. But he was my boss. And, of course, other people ... I didn't see or hear much from Bill Hewlett. Dave Packard, when I first went there—in fact when I first became the division manager—was still in the company; he went to the Pentagon after that—he would come by in the annual division reviews. We still had the annual division reviews then and both Bill and Dave would show up, and Noel Porter and Noel Eldred and the whole gang. And I would occasionally hear from Dave. I remember one very specific instance where Dave wrote me one of these little personal letters on the little miniature stationary and he said, "Dear Bill, you're making a lot of progress in Colorado Springs but I think you should put more emphasis on profit than growth. Best regards."

KIRBY: And that was it! One sentence.

TERRY: No, it was about two sentences. And of course, I looked at that and kind of gulped hard and I made an overhead slide and, boy, I used that letter for about three months with everybody in sight about what it is we're supposed to be doing!

KIRBY: That's marvelous!

TERRY: I think we'd introduced the 180 and we were seeing some good growth from it but Dave's reminder was you're supposed to take some of this growth and put it on the bottom line, not just get bigger. And I would hear from Ray Wilbur. Ray would come out and visit and talk to L. A. Fulgham, who was our personnel manager. And then, of course, the sales people would be visiting all the time; they'd be in and out for all kinds of reasons.

KIRBY: Right. Now, I'm going to ask you to speak on behalf of all HP division managers. If you and the others had complaints or gripes about Palo Alto, what were some of these complaints? Do you remember any?

TERRY: I don't remember any specifically. Relations were generally good with Palo Alto. We used say that the distance helped and we kind of hunkered down under the Rocky Mountains so the missiles would sorta fly over us and under the lea of Pike's Peak. So we really didn't have too many problems. I remember one—this was the education of a young division manager; Bob Grimes was the finance manager—and I got wind of the fact that we were going to have an audit and I didn't really understand what an audit was all about so I either called up or I was talking to Ed van Bronkhorst and I said, "You know, Van, I'm not sure why we need an audit in this division. You know, we only have a couple hundred dollars' worth of petty cash around here." I was kind of thinking an audit was where you went around and counted the petty cash to make sure nobody was stealing it. Van says, "Well, you know, every month you get a profit and loss statement." And I said, "Yes." And he said, "You know, that's a pretty important indication of yours and the division's success or lack thereof." And I said, "Yes." He said, "How do you know those numbers are correct?" I said, "Well, gee, I'm not sure." He said, "Wouldn't you like to make sure those numbers are correct?" "Yeah," I said, "I would really like to make sure those numbers are correct!" And he says, "Well, that's the reason we're having an audit!"

KIRBY: Okay, you just assumed they were all correct!

TERRY: I just assumed they were all correct but that was the care and feeding of a young division manager with an engineering background.

KIRBY: Now, let's put the shoe on the other foot. When you were gone and into a position where you had to manage or oversee several different divisions, what... did you have any gripes about the behavior of division managers?

TERRY: Not gripes but I...

KIRBY: Did they tend to do things that...

TERRY: ...I recognize this sense of independence, you know, that we're smarter than anybody else. I think in some ways, at least in those days–this is the early '60s–it was proportional to both the distance and the time you had been away from Palo Alto. And the people in Loveland were very proud of their accomplishments and somewhat jealous about anything that Palo Alto wanted to suggest, and I used to–not at that time when I was in the Springs but later I used to refer to the people in Loveland as the "Israelis of the Hewlett Packard Company"–proud as the devil, willing to fight at the drop of a hat about almost anything! And then we had the overseas divisions, the fledgling overseas divisions, and of course, they were really "out of sight, out of mind" and very independent from Palo Alto for a lot of different kinds of reasons. But there was a lot less, you know, staff. There was a lot less rules in the company and in the world in those days, so life was a heck of a lot simpler. You just did a good job, made a contribution, you know, followed the ropes, made some money and you could really run your own show.

KIRBY: I don't know whether this is an appropriate question or whether you can even answer it. Are there certain types of qualities or personal attributes that one looks for in a division manager vis a vis some other management jobs?

TERRY: Well, the general management is just what it says, and we later on used to refer to it around here as multi-function: you have to manage multiple functions–R & D, marketing and manufacturing would be the three biggest ones, or the core ones, you might say. So one of the things that I used to look for and try and somehow develop were people who had multiple function backgrounds and this was going on at HP for quite a while. But this was the idea that you would get people, particularly in R&D– well, all three areas–and you would let them spend some time in the job and then you'd try and rotate them. So Hal Edmundson going from manufacturing to marketing and just many, many examples all over the company, was a really good way to get somebody developed so they could kinda see more than one function. Now we've had a lot of examples of people who have only worked in one function but I think you'll find more successful examples of people who have done the marketing job and the engineering job, that very–engineering and then marketing is very common–as a preparation for trying to understand all the other elements of the business.

KIRBY: Uh-hmm. That reminds me, in talking about IBM, the person who had my job—public relations at IBM—never had it really for more than a couple of years. It seems to me they used to rotate people through jobs a lot.

TERRY: I guess so. IBM also had an "assistant to" attitude that HP never did have. They would appoint people to be an assistant to a general manager and they would be assistants to, you would think, at first pass, would be, you know, bag carriers and travel arrangers and they really weren't. They were people on the go who IBM felt, just by observation and working as an assistant, could really learn a lot from a general manager and IBM used that quite a bit, and HP never did use that. IBM had another habit of management rotation that I've always thought was really great. They would take some of their very best people and give them a two- or three-year assignment in training. They would put 'em in a training slot as teachers in an IBM management school in New York, and if you g o t... if you were at IBM and you were a young comer and you got asked to go into this teaching assignment, boy! That was a really big accolade; you knew your star was rising! And there's a lot of other...

KIRBY: They put that much importance on it?

TERRY: Yup. There are a lot of other companies, including HP—at least in those days—that that was not the case. You didn't take your very best people and put 'em in training. In fact, you used that as a place to put people with other problems. You ask about IBM. Your mentioning it again reminded me of trying to make progress at IBM. We invented a product called the 175 oscilloscope; I was the marketing manager. We took it back to IBM-Poughkeepsie. We were able to get in the place because of this sampling scope experience. There was a guy named Helmut Faasch.

TERRY: He was a kind of an older tough Dutchman and he was running a cal lab, I believe it was. It was a typical place to try to get into a big company. And he got some people at IBM, the actual users, to agree to evaluate what was a prototype of this 175 oscilloscope, and so we got this thing working. Floyd Siegal was the project leader, and took it back there and gave it to them and showed them how it worked, and gave them some draft documentation, and then we waited to see what kind of an evaluation we were going to get back from them. And this guy, Helmut Faasch, called us up about two weeks later and said they had put this oscilloscope in an oven to see what kind of a performance it would have at high temperature, which was okay to do, but the oven ran away and it burned up the scope and they were sending us back the charred remains of our cherished prototype. And that really bothered us quite a bit! But what really bothered us more than anything else, they never even offered to pay for it and they never said "I'm sorry"!!

KIRBY: Really?

TERRY: Yeah, that really bothered us. I mean...

KIRBY: Honest to God? They never said they were sorry?

TERRY: Honest to God! Honest to God! And so we ... there was a lot of deep gnashing in Colorado Springs, you can imagine, about those so-and-so's at IBM but we got over it and we went back with the 180 and with other scopes through the years.

KIRBY: Terrific.

TERRY: One other thing, I don't know if it's on your list, Dave. Let me mention, when I was at the Springs, HP-Germany had been started for some time. We'd have to go back in the records to look at the history. Ray Demere was, I believe, still there or in the process of leaving. Fred Schroeder was running the place. And they were a licensee to the US divisions and they were manufacturing oscilloscopes and they were manufacturing some of Loveland's products, and they were just getting their own research and development started in Germany. And I ... there was a combination of problems, clashes, with the divisions about licensee/licensor relationships. This was highlighted in a famous management meeting at about the time in Monterey, where we had the transfer pricing set up so the US divisions would move their products into the international markets at about a 27% discount, as I recall, and this was the legal discount that was needed to fund the overseas operations, and it was all tied up with taxes and the legal movement of money. And Don Cullen, who was the manufacturing manager at Loveland stood up at a management meeting in Monterey and took on Dave Packard in public about what a crappy deal this was of giving these foreign divisions these huge discounts, ’cuz it made the US divisions look bad. Dave got fairly upset and told Cullen to sit down and shut up! But that was the trigger of what became known as "The Management Accounting System", the difference between the legal accounting system and management accounting system and there was a task force. I think it was headed by Van; I was on it. A fella named Wayne Briggson was on it; George Newman was on it. And we invented the so-called "Management Accounting System" that separated some of these legal transfers of funds from actual evaluation of division performance, so the divisions were very motivated to grow their overseas business, where before they were very demotivated to do it.

KIRBY: Did ... Okay. Did Packard create the task force based on this or did somebody else ?

TERRY: I can’t remember, Dave. I don’t remember. I think ... obviously the fact that it came into existence was okay with Dave but I don’t remember exactly who created it. I know the accounting people—Wayne Briggson, in fact, this got him kinda in trouble with Dave and others—they didn’t like this at all. They were real purists: they just wanted one accounting system and they thought, you know, they thought if we h ad... we didn’t really have two accounting systems. We had an accounting system and then we had a management performance/management evaluation system. And they felt if we did this, we would wreak havoc with the company and get into all kinds of problems. As it turned out, that wasn’t the case at all and I think the idea has served us. It’s still serving us well today. Trying to keep the cash, tax, implications out of the hands of these general managers—they didn’t know anything about that—but give them a system they could feel they were being fairly evaluated on.

KIRBY: I think that may be the trigger for Wayne Briggson eventually leaving the company. I had heard that there was a meeting...

TERRY: That’s exactly right. That’s exactly right.

KIRBY: ...and Bill Hewlett... it may have been after Dave went back to Washington.

TERRY: It could be. It was about that time.

KIRBY: And Briggson, in a meeting of maybe a dozen people, really took on Bill Hewlett.

TERRY: Yeah, you’re absolutely right. I do remember the meeting and yes, that...

KIRBY: You were probably there.

TERRY: That was Briggson’s exit from the company. And it was his decision more than it was HP’s. He didn’t get himself in trouble with Hewlett or anybody else, and being asked to leave, but he just fundamentally believed that we were embarking on a dangerous and incorrect course and he just couldn’t take that. And it’s kind of a shame ’cuz he really was a very strong guy and I think he could have played an important role. The other thing I wanted to mention about those overseas divisions. They ... Germany was up and running. I don’t the one in the UK was established yet but there was a concern about relationships with US divisions and a concern about trying to help Germany, HP-Germany, trying to figure out where their role was between the licensee role and the developing-their-own-products role. And I got a call from probably Ralph Lee that says, "I want you to join the GmbH Management Advisory Board." HP Germany had a legal board which was just a few people but they also had a management board, which was essentially just a management of the division and so, I’m sure it was Ralph said, "I want you to get on this board and I want you to see how you can help these people." So I used to go to Germany about once every six months and I’d sit down with Fred Schroeder and Erhard Knoblauch and we’d go through all of the things they were doing and I’d made a lot of comments on what I thought was good and bad, I was kinda the ombudsman for HP-Germany for about two years. I’d make ... they would say, "God, we’ve got this big problem with the microwave division and can’t you help us?" And I’d come back and I’d ... so I was trying to conciliate positions between these two guys as well as try and help them get their own proprietary R & D program started, and that's a whole bunch of stories in and of themselves and a lot of futzing around with aircraft noise monitoring systems and other projects that didn't go anywhere until they got really settled into some things they could do. But I enjoyed that. I learned a lot about international business, Erhard and Fred and a lot of good friends in GmbH.

KIRBY: Some business people hold the idea that a truly good manager can manage anything. What do you think of this?

TERRY: I don't think that's really true. I think you've gotta have, you know, you've gotta have some acquaintance with something or other. And a lot of HP, I think, it's been the technology: you've just have ... you're going to make a lot of decisions about committing a lot of money based on emerging technologies and if you don't understand that, I think you're just... you just can't tell the good ideas from the bad ones. And if you don't have that technology background, you know, at least learn something about it and have a lotta either marketing or marketing empathy that you can understand about customers and customers' needs and so forth. So you've gotta.

TERRY: I think you've got to have some kind of a hook, so to speak, to hang your hat on in terms of a background that sort of fits the business. If you're just a general purpose businessman, I think you're going to have some problems with the dynamics, pace of a technology kind of operation. I remember Varian was a neighbor of ours, always has been a neighbor of ours. Bill and Dave knew the founders. They were kind of a rival, in a way, because we were both in the electronics business. We were not competitors. We were competitors for our reps' time because they represented Varian and HP, so we were kinda friendly competitors for their time. Varian was founded by technologists and was managed by technologists for most of its life. At one point, they recruited a person—I can only remember his first name; his first name was Louis (I can't remember his last name)—from Schlage Lock in South San Francisco, where they had a machine shop making brass parts...

KIRBY: Schlage Lock.

TERRY: Right, and he didn't ... he had no background in the technology business and Varian was a very technical kind of a company, and he only lasted about a year or so before he moved out and we would irreverently refer to him as "Louie, the Lock"!

KIRBY: Oh, really?

TERRY: "Louie, the Lock" didn't make it at Varian because he knew all about locks but he didn't know anything about klystrons or electronics or customers or so forth. But also, you know, there's probably a danger in that, as you business changes, the perfect example today is the retail marketing challenges of personal computers and printers and the like, that if you're stuck with your old-fashioned attitudes about "Boy, you've gotta be an engineer and you've gotta understand the technology," I don't think we'd be where we are today in some of those kind of markets. We've got people who really have grown up more on the marketing side. They understand enough about the technology; they're not going to go off in left field but a different balance of interests and strengths. Well, we can try it there if you want.

KIRBY: This is Dave Kirby here. We've had a problem here with the tape so we're going to have to go back and repeat some of this material that we had covered which we didn't get on tape, so, Bill, it may have been that while you were in Colorado, HP created sort of an offbeat product, perhaps in Loveland, that was later abandoned. This was a device to electrically anesthetize cattle, large farm animals...

TERRY: Yeah, I sure remember it.

KIRBY: Okay, can you tell us something about it?

TERRY: Yeah, it was called an electrical anesthesia oscillator, I think the product was. It was a relatively simple product. It was an audio oscillator and different ways of modulating and control of power levels, and it based on a theory that if you put these electrical signals into the brain of an animal or even a human being, you could temporarily anesthetize them and then when you took the signal off, they would just wake up. And of course, it was a lot less dangerous (thought to be) than chemical anesthesia. The problem was that the real psychology or, I guess, the physiology you'd call it, of what actually went on in the brain under this stimulation wasn't very well understood at all and HP developed this product. They shipped, I think we must've produced 20 or 30 of them, shipped them off to experimenters who were experimenting at the University of Tennessee and at a university in South Africa, and also experimented on various animals up in the Loveland area, and the problem was that sometimes it worked rather spectacularly: you'd take a great big bull and stick these electrodes in their head–the electrodes were fairly long needles–and then turn on this oscillator and mess around with the controls and the bull would fall down and then when you put the electrical signal off, the bull would jump up and it seemed to work fine. But it was very inconsistent and sometimes it would work, and sometimes it wouldn't work at all, and sometimes it would drive the bull crazy and he's shit all over the place and charge out of the barn. It didn't really ever go anywhere. I remember one time, that the rep that we had in South Africa I ran into at a New York show and I asked him about this research that was going on at this university and he told me he was... he knew they were doing some research. In fact, we might have sold or lent a couple of these products to this university and he also had told me that they were using it on humans in an experimental sense and I said, "Boy, I thought that was a little unusual" and he said, "Well, not really. After all, they're only blacks." That set me back a little bit! Wow!!

KIRBY: Oh, my!

TERRY: But it never did go anywhere. We produced 20 or 30 and just abandoned the whole project, and I was in the Springs at the time. I knew about this going on in Loveland and then later on, when I came out into the computer business, Tom Kelly worked for me. He was in Loveland and he called me on the phone one day and asked me if I remembered the project and I said, "Yes," expecting it had gone away and he said, "Well, it hasn't totally gone away. We have, I believe, 6 or 8 monkeys that we own that are being boarded down on some farmer's ranch in Colorado and we're paying room and board for these monkeys, and we're tired of paying room and board, and we need to do something about that." And I said, "Well, why don't we give them away to a zoo." And he said, "Well, we've tried that but these monkeys are so damn mean, I guess because we stuck the needles in their heads so often that no zoo in the country is going to take them." And I said, "Well, the only thing to do is to kill them. Take them off to a humane society and dispose of them that way, and if you really think that the expense is a problem, we can probably stand the gaff of the local community if there is any problem about getting rid of these mean monkeys." Well, that was the end of the conversation. About two weeks later, Tom called me up and said, "Remember about the monkey problem?" He said, "The problem solved itself. The South Platte River flooded and destroyed the farmer's pen and the monkeys escaped and they're roaming around the Midwest somewhere." So I used to kid Tom, "They're probably linebackers at the University of Nebraska!" The monkey problem went away.

KIRBY: All right, now, each year at HP, there was an annual event called "Quota Setting." As I recall, it was about a 3-day process or something like that. Can you explain what it was?

TERRY: Yeah, it was the yearly setting of sales goals and when we had manufacturers' reps, they would come to town and we would talk about what we thought what an appropriate sales goal was for the coming year. It was pretty easy to do with the reps because they were independent businessmen and it wasn't really a performance measure for them. But then after we had our own sales-force, it took on kind of an increased degree of seriousness and we would sit down, usually by division or product line, usually in August, September time-frame and we would try and have a discussion about what an appropriate sales goal was and they would be measured against these sales goals, and so your percentage of quota achievement was a really big figure of merit on how good a job you were doing. The sales people, these were sales management people, would bring a lot of information to the table about how bad the economy was and how then customers were all going broke and how they couldn't take any kind of a big quota at all, and of course, the division people would bring a lot of information on how good the products were, what the impact of new products were (which is a very important part of the quota) and why they had to take a big quota. And so a series of negotiations were carried out where some kind of compromise was struck. The sales people would also point out that there were certain large orders that had occurred in the historic period that were not necessarily going to occur in the future. The division people would say yes, that's true but there's this big deal that we can get in the future period. And so it was a kind of a give-and-take, and some way, somehow, we agreed upon what an appropriate goal ought to be. People were pretty tough about it. The Neely people were very proud of their performance and they were damn good, but they took a very serious attitude about the quota and not getting stuck with the too big a quota. I'll never forget when some of the new product lines came in, the Neely were very skeptical about whether these products were going to sell or not. Why HP had developed a line of proprietary products called PL36; they were RCL-resistance, capacitance, inductance, bridges, impedance bridges. They were developed at HP laboratories and then moved other there and became the essence...

KIRBY: Moved over to YHP...

TERRY: They were moved over to YHP and became the essence of their first proprietary product line. They did quite well with it through the years but when they first... eh, it's a very basic piece of equipment on an engineer's bench. But when they first got started, the sales people were very skeptical. They had a young marketing manager named Mori—there were two Moris, Big Mori and Little Mori at YHP, and Shegeki Mori came to the United States well-prepared to explain why they should take a quota for these products. He had a stack of slides about three inches high that took 45 minutes to go through and he played this show off on George Glenday, who was the head of instrument sales for Neely and George listened rather patiently and fidgeted somewhat and at the end, Shegeki Mori announced that he thought George should take a quota for $750,000. And George exploded and I don't know exactly what bad language he used but he told Shegeki Mori he was absolutely crazy and he couldn't possibly, under any circumstances, take such a large quota. And Shegeki Mori listened to all this and bowed politely and took his pile of slides and turned them over and started through slide 1 all over again, and it became pretty obvious he was gonna ... in typical Japanese style, he was gonna play the whole story all over again because George simply hadn't understood, and George finally figured out that he was going to get 45 more minutes of this stuff and he threw up his arms and said, "All right, goddamnit! I'll take the $750,000 quota!! But I don't think that makes any damn sense at all!" And I remember that very well because at the end of the year, he sold something like $3 million worth of these products and it beat the quota very handily!

KIRBY: Now, what has replaced quota setting now, if anything?

TERRY: I think it still goes on. I know in the instrument business, when I retired two years ago, it was still going on pretty much the same way. There was a discussion about markets and about products, about goals by product line. Instruments has been very big on product line quotas and so is medical and analytical. I think it probably takes on different nuances in the computer business, and particularly in these retail areas, where we're dealing with dealers and distributors: they're independent, we can't really set performance goals for them the same way we can for ourselves. But I'm sure there's a discussion that happens about what's happening in the marketplace, what have we got coming along, what should be done in the future. Probably with dealers these days, it's done on a rolling basis, that is you discuss it every quarter, four quarters in advance, and keep pushing it ahead of you, rather than the yearly thrash that goes on the rest of the company. But besides goal setting, it was a wonderful communication time. People got to know each other better. People learned a lot about each other's position and new products and customers and markets and an awful lot got done besides just setting a numerical goals to be measured against for the coming period.

KIRBY: Yeah. Another tradition around HP was the rush to ship products at the end of the year, of course, and, I guess, the end of a quarter.

TERRY: Yup. Yeah, there's been that. That's been around for a while.

KIRBY: I guess it still goes on.

TERRY: It still goes on. I'm afraid it's just human psychology in action. You set a goal, the numeric or time-frame on it, the numeric goal against a time-frame, people are going to rush as that time begins to elapse, and it was always there on a, pretty much, on a monthly basis in the divisions and somewhat at the end of the year. But it was, see?, you know, you've gotta make the monthly goal, so the last week of the month was a really pretty big deal and then later on, this idea of quarterly goals—because of the quarterly financial reporting—crept in also. I don't happen to think that's a very good idea. I think monthly and yearly is probably as far as you should go, but it's just human psychology and it's got some problems. One of 'em is that you can make a lot of mistakes when you're rushing around, particularly with the paperwork. You put the wrong thing in the box with the wrong paperwork. We never did really have any problems. There were suspicions that we product quality problems because of this rushing around. That was, in my mind, never really proved but you could prove you had a lot of paperwork and just detail problems that you messed up with. And, yeah, the big problem is that once you start doing this, you know, you've got a really big problem with the new month happens 'cuz the first four days of the new month, nothing happens. It's very quiet. People restocking the packaging department and everybody is tired and resting up and so, you sorta create your own problem. You've got a slow start and therefore you have to have a big finish. But it's still there and there are certain things you can do about it, in terms of goal setting, daily/weekly shipments but I'm afraid it's always gonna be with us.

DIVISION REVIEWS

KIRBY: Let's talk a bit about division reviews. These were periodic and how often, for example, was Colorado Springs reviewed and by whom?

TERRY: They were annual reviews. The schedules were set up well in advance. At the beginning of the fiscal year it would be set up so you'd know on the calendar where you stood. They were shared with Loveland. The top management would spend the week: two and a half days in Colorado Springs, and two and a half days in Loveland at that time. The whole top management group was there: Bill and Dave, Noel Eldred, Noel Porter, Ralph Lee, Ray Wilbur would come, Frank Cavier or Ed van Bronkhorst, so everybody was there. It was heavy new product R & D oriented—what are you doing in the lab?—Barney Oliver was always there to play the big role in these things. There were reports given on other elements of the division, but the emphasis was on R & D. Very little emphasis... there'd be a cursory thing in the beginning on the financial report. Bill Hewlett always used to kid us about if the financial results were good, then the division manager would give the brief financial report and if the financial results were not good, the controller or the accounting manager would the give the financial report. So you could tell on the agenda what was coming by who was gonna give the financial report. But again, much of the time was spend by R & D.

KIRBY: Okay, was it the case where maybe a product still under development might be canceled based on the review or is that... was that too strong?

TERRY: I can't remember. I'd have to go back, Dave, and really remember. I don't think that was the case but I'm sure there were cases where things that were on their deathbed and where the division had real skepticism about what they were doing, comments that came up at the division review really forced a decision on making a change or doing something in that regard. I can remember one—I don't know why I remember this one—that we would visit each other. That is, when Loveland ... when we had our division review, a couple of people would come down from Loveland to sit in on the review, because that way we could kinda learn something about techniques of the review and what was good and what wasn't and we'd learn something about each other's divisions. So I went up to Loveland and sat in on Tom Kelly's review and this was when a guy named Freddie Winninger, who's a business associate of mine today, was working on an analog computer. This is the first computer project. This was long before digital computers and this would be in the late '60s. And analog computers were used in a variety of applications in the world. The military aerospace design community used them and HP had an idea, Freddie Winninger had an idea, on making an analog computer using servo motors to drive the potentiometers and controlling this from a teletype. This was really revolutionary at the time and he built this giant kluge and it was in a closet in Loveland—this was a super-secret project—and we were all walking around the lab at this division review and there was only room for about five people in this closet and I was on the edge 'cuz Bill and Dave and Barney were in the middle of this thing, and Noel Eldred was on the edge, and Noel took real umbrage in this project because he felt that there was... he didn't really think it was much of a contribution and he was very uncomfortable about trying to increment the sales force into the analog computer business based on this idea. So I don't know that it was canceled in that closet but I know as a result of that division review, the project went away!

KIRBY: Were there any other events that occurred that were unforeseen or...?

TERRY: Well, again, you know, you remember... you don't remember the ones that happened at your division review more than you remember the other guy's but I remember being in Loveland. I was in the computer business at the time. I had left the Springs about a year or two, about a year, and they had a division review in Loveland where they talked about a product called the 970 probe volt meter. John Young was in charge of what was called the electronic products group; I was in charge of the data products group. We were sailing along with the hand-held calculator. The people in the electronic products group wanted something hand-held, too, so they invented a hand-held volt meter. This was really a very innovative product. It was much better than what was on the market invented by somebody called John Fluke Company, but it had some problems. It had a very complex hybrid, integrated circuit hybrid, in it that was expensive to manufacture but there was ... the market would pay a certain about of money for this thing—$200 or $300—and the manufacturing cost was pretty high because of this expensive circuit. And this was all pointed out at the division review, and a fella named Don Schultz was doing the talking, but the people there felt that if they could get enough volume for this thing, if they could 10-20,000 a month, they could drive the cost of this integrated circuit down. Now, this was a little unusual because most of HP's instruments didn't sell on that kind of volume and most of them didn't have much of a learning curve. You couldn't drive the cost down very much, somewhat as you got more experience with it. But they proposed that they were going to price this at a fairly ... at a competitive market price and they would make money if they got enough volume. And this is where the famous statement of about "If we get enough market-share, we can make it a profit" came up. And Packard came out of his chair! And poor Don Schultz, who was a really fairly quiet guy, stood there in front of this group of 40 to 50 people...

KIRBY: Oh, yes, right... rather shy.

TERRY: .. .and a little shy, and he started defending this position that was as much John Young's as it was his, and Packard just got really upset and he got on his high horse and he gave a lecture on the importance of making a profit versus market-share And that resulted, for about 5 or 10 years in the company, that you wouldn't be caught dead saying "market-share"!

KIRBY: I never knew where that came from.

TERRY: That came from that famous division review and, you know, both sides were right. Yeah, there was a learning curve but Dave's point was a good one, too, that you better be damn careful if you're pricing on this learning curve and intending to lose money on the first ones and make money on the last ones, 'cuz that's probably gonna getcha in trouble. So, and Dave's point was that there's nothing wrong with market-share I mean, that's measure of success. It's how you get there. What you really want to do is...

KIRBY: It's a means to get to the end.

TERRY: Exactly! What you really want to do is have really good products and that's the way you're going to earn a big market-share and you're not gonna get there through—I forget how Dave put it—"fancy pricing".

TERRY: Another division review story, while we've got the tape running, we had a division review in Scotland. Dave was in the Pentagon. Peter Carmichael was running the division in Scotland—this is in South Queensfery—and there was a fellow, whose name escapes me right now, who stood up and started talking about the problems in the UK and the problems with the inter-company pricing wasn't providing enough cash or profits or other for this and he kept going on and on and on, as if this problem was not their problem or so forth. It was kinda "our" problem, that is, the people who were doing the reviewing had this giant problem. And Hewlett got fairly excited and he stood up and he—figuratively stood up—and he says, "Look, I can do everything I can to save our company but I can't save your country!" The UK had problems, and it got very quiet for about 15 seconds and the subject got changed.

KIRBY: Weren't you telling me once that Hewlett was going to tour the plant with you?

TERRY: Oh, yeah! We had a division review in Colorado Springs and we were... we rehearsed these things. We were very concerned about the time; we had to stay on schedule and we try to get maximum mileage out of our visitors—a plant tour so they could see what's going on—but particularly so the people in the plant can see them 'cuz they knew who Bill Hewlett and Dave Packard were, and they were usually pretty good about this. They'd take ... we'd take an hour and they'd walk all over the plant and they'd shake everybody's hand in sight and they'd clap 'em on the back and, you know, it was a really big morale booster for the division that the top management was interested in them. One time—Dave was in the Pentagon—Bill came out and was part of a top management review group, and we had set out this agenda and I showed Bill the agenda and I said, "Now, Bill, we're going to eat a very quick sandwich and then I'm gonna walk you around the plant so you can see what's going on and meet some of the people." And Bill said, "Well, gee, I don't think I can do that. I want to get a haircut." And I said, "You want to do what?!" This is the yearly "you get 3 or 4 hours of Hewlett's time" and I said, "Bill, you can't have a haircut. I'm not going to let you get a haircut. You're going to have to stick to this agenda." And he kinda grumbled a little bit about that but, good-naturedly, he gave up his haircut and we went on with our plant tour.

KIRBY: Following these reviews, was there any type of follow-up report by top management to you, a division manager? Was there some sort of, I guess, a "thank you" note or something?

TERRY: Yeah, there was. It varied. Some people would write fairly ... first of all, people were not bashful at all. So you got a lot of it right first hand. I mean, Barney would start in on something or other and it was, again, hard to stay on schedule because people were not bashful. They did not sit there and just listen. They would talk and they would say, "This is a great idea!" or "This is a really dim bulb idea"—famous Ralph: "That's a dim bulb idea," said Ralph Lee. So you got a lot of it that way and then there were, yeah, there were thank you notes and comments you'd get in writing from Bill or Dave, or Ralph Lee or somebody like that.

TERRY: We had one in Germany one time with the top management group. Things were not going well at the time in Germany. We had ... Eberhard was in charge. We had various kinds of problems. Dave had come back from defense work and this was the early days of Richard Nixon getting in trouble with Watergate and Dave was pretty picky about that subject in particular. There were comments made during the division review about—they had 'way too much inventory—about the economy of the United States and how that was creating a problem with world economies—this Watergate thing was starting to go—and that, in some way, was at the seat of the problems in the division. And Dave listened to all this, and we all sort of listened to this, and didn't say much about it and we went off to a big dinner at the Congress Hall in Boeblingen. It was a new congress hall, and wives were along. I may be confusing a board review with a division review, but anyway, the circumstances are still the same but Lou Packard was there—I don't believe my wife was there—so maybe it was just Lou Packard, the top management wives, the visitors wives, would've made sense. But other German wives were there. Anyway, we had this dinner and there was no expectation of just doing anything except having the dinner but toward the end of the dinner, after the dessert was served, Dave Packard stood up and clanged on his glass and he says, "Well, I guess nobody's going to introduce me, so I'll introduce myself. I'm Dave Packard, the chairman of the Board of the company" and poor Eberhardt is sitting there at this same table, I'm sitting there at this table and he's just about to drop off his chair! And Dave says, "Well, I want to give you a few comments about the review I heard today." And so Dave starts in and he just gave everybody both barrels: "You've got 'way too much inventory. You've got sloppy management. Blah, blah, blah." And then he got onto the fact that the "United States of America is not here to save your economy in Germany and we're managing our own economy and you've got to manage your economy!" And about a third, almost at the end of this, Lou Packard is pulling on Dave's sleeve and she said, "David, David, that's enough! That's enough!" So Dave finally wound up and said, "Harumph!" And we all sat down. God! It was very quiet after that. Eberhard wasn't quite sure what to do, so Eberhardt stands up and he says, "Well, I guess that's all there is. Good night."

KIRBY: That was it?

TERRY: That was it!

KIRBY: Another glorious evening!

TERRY: Another glorious evening! Merry Christmas! Dave had to get it off his chest and, by gosh, he got it off his chest!!