



## GE Appliances president and CEO **Kevin Nolan** is going out of his way to assist Jews with Shabbos observance

## By Shloime Zionce

IT STARTED WITH A RANDOM TEXT message from my editor early one afternoon. "Want to go to Kentucky tomorrow?"

I chuckled at the way the message was worded. What kind of question is that? I wondered. Of course, I want to go to Kentucky! I had never been there before. An interview had been scheduled with Mr. Kevin Nolan, president and CEO of GE Appliances, whose headquarters are located in Louisville, Kentucky. It took a couple of hours to sort out my schedule, but by four p.m. I was all cleared to travel, and my tickets were booked.

Due to bad weather, my flight sat on the tarmac at Newark for two hours waiting for takeoff, causing me to miss some of my meetings at GE headquarters, but thankfully we arrived in time to salvage the main purpose of the trip—my meeting with Kevin Nolan, where I would learn how the Irish Catholic CEO of a multibillion-dollar business got involved in manufacturing appliances in compliance with Jewish law.

After a relatively short flight, the plane lands at Louisville Muhammad Ali International Airport. I marvel at the small size of this airport compared to the large airports in the New York area. A quarter of an hour later, I find myself approaching GE Appliance Park, the company's largest manufacturing facility, a whopping 1,000-acre campus that employs roughly 6,000 people and manufactures GE appliances like dishwashers, refrigerators, washing machines and dryers. The parking lot is huge, with thousands of vehicles, and is surrounded by dozens of buildings housing manufacturing facilities and executive offices.

My driver pulls up in front of the visitors' center, where I am met by Eli Antebi of Zman Technologies, who is here to show me around. He and his partner, Rabbi Tzvi Ortner, founder of Halachic Tech USA and director of the OU's Division of Halacha and Technology, have been working on a special project for the past few years with the support of top GE executives. "This place is massive," he warns me as we walk through the door. "It even has its own zip code."

Inside the impressive building, we walk through an endless maze of long hallways until we reach a large conference room somewhere deep inside the building. There, Eli Antebi tells me a little bit about the Shabbos Keeper, an innovative piece of technology that is easing Shabbos observance for thousands of Jews.

Developed through a unique partnership between GE Appliances and Zman Technologies, the Shabbos Keeper device is a revolutionary piece of technology preset to work with over 150 GE Appliance models. It automatically puts appliances such as ovens and refrigerators in Shabbos mode so that observant families don't have to worry about remembering to turn off the lights in their refrigerators or to set their ovens properly before Shabbos or Yom Tov.

While this innovative technology is certainly exciting, what I find even more fasci-



nating is that GE Appliances is working so closely with rabbis to enhance Shabbos for religious Jews.

Eli Antebi introduces me to his partner, Rabbi Ortner, who has come to Kentucky with him for development meetings with GE. Rabbi Ortner tells me how he got to know the CEO of GE Appliances.

"My first introduction to Kevin was through Motty Gross, who is the CEO of  $\ensuremath{\mathrm{AJ}}$ 

Their facility is a whopping 1,000-acre campus that employs roughly 6,000 people.

Madison," Rabbi Ortner tells me. "I had been involved with him for many years, discussing many halachic issues with regard to appliances. At some point, he met Kevin and told me that I should speak to him. Kevin has a very broad vision, and once he realizes that something is the right thing to do, he just does it.

"The first time we met, he was really into collaborating, and he came up with great ideas. Kevin put us in touch with his main guys here to start working on things. First-Build [a community of innovative thinkers, backed by GE and tasked with generating new ideas for home appliance projects] made it possible for us to develop various ideas slowly instead of having to go straight to mass production, which allowed us to get feedback before moving forward.

"We were then introduced to Larry Peturo,



who came down to the office of Zman Technologies in New Jersey. He basically runs the manufacturing side of things, in addition to managing other projects. Together, we developed this Shabbos solution that works for refrigeration."

Rabbi Ortner, Mr. Antebi, and I head back into the maze of corridors. We are shown to another conference room where we meet with two engineers, Amelia Hensley and Steve Root, who have worked on the Shabbos Keeper project. I ask them to tell me about what they do.

"I refer to this device as the Enhanced Sabbath Mode, but you'll hear others refer to it as Shabbos Keeper," Steve begins. "Some appliances have a Sabbath mode already, and when we brought in the Shabbos Keeper, we had to name it something, so I started referring to it as Enhanced

Sabbath Mode," he explains.

"The broad picture on a really high level is that we're automating the action of the appliance so that it enters and exits the Enhanced Sabbath Mode, or Shabbos Keeper Mode, exactly when it's supposed to for both Sabbath and holidays. even if they're consecutive. The appliances enter the special mode based on a signal that's triggered by the Shabbos Keeper, and they operate in that mode for the entire period—usually from 90 minutes before sunset until at least 90 minutes after sunset.

"Each appliance operates slightly differently, but the idea is the same for all of them—to make sure that they operate in as strict accordance with the law as they possibly can while maintaining safety. There need to be some compromises along the way to ensure safety. For example, the range is likely taking sample readings of the thermostat to check that it's at the right place a little more often than may be

desired, but we don't want a situation where the range gets too hot and we lose control of the temperature and make it unsafe for the oven.

"Refrigeration, on the other hand, is relatively straightforward—no lights, no speakers or sounds or anything like that, and all of its control operations are automatic, so that whatever the user does really has no effect on the operation of the unit. The unit just operates according to a schedule, attempting to maintain temperature as nearly perfectly as it can. It's probably not nearly as good as it could be if it were operating with its full features, but it's pretty good and certainly good enough to get us through Sabbath and holidays."

"How far off is the thermostat when it's running in that mode?" I ask.

"I don't have the exact data," Steve says,

"but there's no way that it regulates as finely as it does when operating in regular mode. In regular mode, we're looking at the thermostat much more often, once a second, and regulating it accordingly. In Enhanced Sabbath Mode, the interval is once every two minutes, plus a randomization to eliminate changes through the user's

"The answer to your question will vary by the individual model because each model has its own unique system with slight differences from similar models," adds Amelia. "That's why we don't rely on something we've done in another model; everything is based on itself. So when we conduct tests, we test each model individually to ensure that the cycles we are automating in Enhanced Sabbath Mode can maintain the correct temperature within its own system."

"Refrigeration is a really good example of this," Steve continues. "The Enhanced Sabbath Mode wasn't attuned really well for a French-door refrigerator with a bottom freezer. Fortunately, we were able to test it extensively because it's built right here, so it's very easy to get sample units here and run whatever tests are needed.

"Another issue is that we recently moved over to a different control board that goes across six different platforms, each of which has different models and sizes. So we limit the Shabbos Keeper to a specific number of those models, but it's not ready on all of them yet. One reason is that some of the UIs [user interfaces] on some of those models are non-compliant. That means we can't run the Enhanced Sabbath Mode there because a user action will result in obvious feedback, blinking, LEDs, and potentially even sounds.

"We also have many models that we've produced with this board over time, and we don't want users to think that the unit they already have in their homes, which is missing the software or hardware necessary to support this mode, will be good to go if they just attach the Shabbos Keeper. They can attach the Keeper and it might even



communicate with it, but it won't result in the performance they want. So that's another part of the problem.

"We put Enhanced Sabbath Mode in our major product lines of refrigerators and ranges, and we are just now incorporating it into one model for a pilot on a range, although we have yet to complete the tuning process on that. I have people working on both the Shabbos Keeper updates to support the range and on the actual range software. Amelia is our tuning expert, making sure the performance is acceptable across the different cooking modes that will be supported."

"Were you involved in working on the original Sabbath Mode as well?" I ask.

"Sabbath Mode is fundamental for us," Steve says. "Almost everything we have across all of our product lines will have a regular Sabbath Mode, although there are some exceptions—window air conditioners, microwaves and things like that haven't had them. But I don't think microwaves need them because if you're going to violate the law by using a microwave, there's no reason to have a Sabbath Mode, and it doesn't really apply."

"You can see that he's our rabbi," says

Rabbi Ortner in jest. We all share a good laugh.

"I've been in a lot of these conversations," Steve continues, "and I've learned a bit about the whole process. I don't claim to be an expert on Jewish law, but I understand how it gets interpreted by talking to Rabbi Ortner about an idea I'd like to work on. Then something comes up that might be a good idea, but we don't want to go ahead with it because there's a compliance issue. That's why we have to rely on the experts to make sure we're on the right path. Otherwise, we get ourselves into trouble.

"Sabbath Mode is relatively easy. We limit it to user actions not resulting in sounds or

Since Kevin knows everyone in the room except me, he spends a few minutes making small talk and getting to know me. direct impact, and that has been going on at GE for 20 years. Even since I've been here, I've worked on a Sabbath Mode somewhere at some time."

"As people who are obviously not part of the Jewish community, what are your thoughts about all of this?" I ask the engineers.

"We've been working on appliances for a long time," Steve explains. "There are several modes that we put into appliances that we will never personally use because, practically speaking, it just doesn't fit with our lifestyle. A good example of that is a microwave. A microwave has lots of buttons and recipes and modes, but the only buttons I ever use are to add 30 seconds or a minute of cooking time, and maybe popcorn. So while many of the modes we program aren't of personal value to us—for example, I don't have an interest in precision cooking—we recognize that they have high value for some unique customers, and that makes a huge difference to us. If something has a high value for our customers, we'll work on it.'

"One of our mottos here is 'Owner is boss," says Amelia. "That's how we view things here; we'll do whatever the appliance owner wants because they're the bosses."



"It's just surprising to me because the Jewish community is quite small on the global stage, yet so much effort is being put into this," I say.

"When a company is willing to satisfy the needs of an individual customer, there are side benefits even outside the community because it shows that we'll do that for anyone," Steve points out. "And when you like a niche mode—such as precision cooking or Sabbath Mode—you really like it, and you're going to talk about it.

"We want people to tell us what they need, and then we'll do what we can. And we hope it extends into our full customer experience.

"When it comes to service issues and things like that, we believe that the problem isn't fixed unless we know the true root cause. Amelia will tell you that when something breaks and we don't have enough data to figure out the root cause, it can be very troubling for us. But we continue to track it until we figure out the problem so we can make sure it isn't repeated and that it's fixed across all the product lines. There are some Enhanced Sabbath Mode examples of that, where we've gone through some iterations on some of the barometric controls and the like in order to improve those cycles—not because *each one* was negatively impacted but because *some* were, and we had to make sure to fix those cases."

After our meeting with the engineers, I am directed back to the original conference room. A meeting between Kevin Nolan and some of his top executives has just ended, and I get to talk to him briefly as I walk to my next appointment, a VIP tour of AP5, GE's onsite refrigerator and freezer manufacturing facility. It's obvious that Mr. Nolan is a celebrated leader. He commands the respect of those in his presence, and at the same time, he's a people person and very down-to-earth. As we walk down one of the corridors together, he stops one of the building's maintenance workers in the hallway. "Andy's got a problem with his car door," he says to the man. "Do you have a tool that would work with an Audi?"

The maintenance man assures him that he can fix whatever needs repairing, but it's the interaction that impresses me most. The CEO must have many pressing issues on his mind, yet in an impressive display of leadership, he's looking out for his employees every step of the way—even in the case of something as seemingly insignificant as a malfunctioning car door.

The two rabbis and I are driven across the massive campus to AP5, GE's gargantuan refrigeration plant. With one million



square feet of manufacturing space, it makes for a long but very interesting tour. We are met at the door by Tim Vibbert, an exmilitary man who is clearly very passionate about the factory and proud of managing it, and Phillip Priddy, the plant lean manager. In an effort to maintain secrecy regarding the company's cutting-edge technology and manufacturing processes, photos are not allowed on the production floor, but a few exceptions are made to accommodate *Ami* readers.

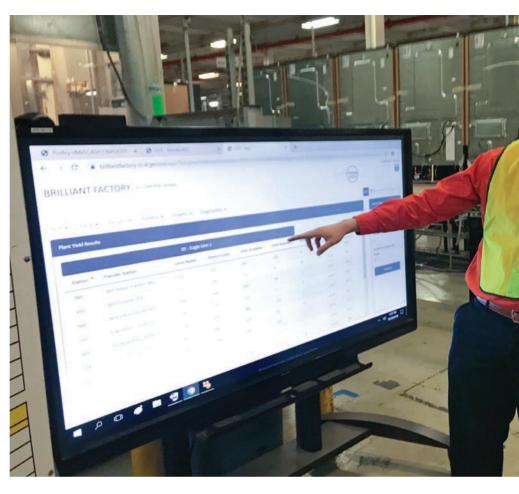
The manufacturing process is fascinating. We get to see how refrigeration products are made from scratch. Watching resin pellets turn into complete refrigerators and freezers is a gratifying experience. Tim waves to some of the employees he encounters and gives the thumbs-up sign to others. He seems to know all of his employees on a first-name basis, which amazes me considering that there are over a thousand of them. I compliment him on his people skills, but he brushes it off. "We're like family," he explains.

When the tour is over, Tim shakes my hand enthusiastically and thanks me for coming. I am then driven back across the huge parking lot to Kevin Nolan's office for the final event of the day, my interview with the CEO. Seated with me are Rabbi Ortner and Eli Antebi, as well as Kevin's director of communications.

Since Kevin knows everyone in the room except me, he spends a few minutes making small talk and getting to know me. I tell him a little about my job and my travels, and he seems to be especially intrigued by my recent trip to Afghanistan. He listens intently as I tell him about the people I encountered and even looks at some photos from my trip. He's a great conversationalist. Eventually, we get down to business.

"Tell me a little about your background," I say.

"I grew up in Stamford, Connecticut," he says. "I went to the University of Connecticut as an engineering student. I started with GE almost 30 years ago. Of course, we've



been sold and are now owned by the Haier company. I started in Connecticut, moved to North Carolina, and then joined the appliance business 23 years ago. I happen to be a CEO, but if you ask me, underneath it all, I'm an engineer."

"How and why do you think you were able to climb the ladder like that?" I ask.

Mr. Nolan thinks for a minute. "I'd say that for one thing, I'm curious. I've always been curious about learning things. Also, I've always been a hard worker. My father passed away, but if you had asked him, he'd

"The more we can learn about different consumers' needs, the better we can be as a company."

have said, 'Kevin is a hard worker.' I might not be the smartest, but I work hard."

"How long have you been in this position?"

"About two and a half years. When we started our relationship, I was head of engineering for the company," he replies, referring to his strong relationship with Zman Technologies.

"Can I take credit?" jokes Rabbi Ortner.

"Yes," says Kevin. "I was blessed." We all laugh.

"Obviously, you have a gigantic operation going on. Just look at that factory. And I hear that it's one of nine in the country," I say.

"Nine factories with almost 13,000 employees. And three of the factories are right here," he says proudly.

Throughout my day touring and meeting with people at GE headquarters, one theme that keeps coming up in conversation is the extent to which Kevin is personally involved in this project to help religious Jews keep Shabbos. I need to understand this further.



Phillip Priddy shows Shloime Zionce the advanced computer system that monitors work at the factory

"I find it very interesting that GE, possibly the best-known electronics company in the world, is doing something to accommodate the Jewish community. Can you share some insight into why that's happening?" I ask.

He thinks for a minute. "I hadn't realized that it's already been five years since we started the relationship. It kind of happened by chance, but one of the things I've always believed in is that you have to understand different communities and work with what we like to call users—consumers. Not everyone is the same, and different people need different things from our products. To me, the more we can learn about those different needs, the better we can be as a company. If we want all our users to be happy, then

we really need to understand who they are, what their needs are, and what their problems are.

"When I grew up, I had a lot of Jewish friends. Stamford has a pretty big Jewish community, so I was aware of what I would call issues, but I didn't understand how they related to appliances. When I met with Zman Technologies, I was intrigued by the idea of doing something different and solving problems better than others could. I think that as a company, we're better suited to solving problems for specific needs than other companies."

"Why is that?"

"I think it has a lot to do with culture," he says. "The people here really want to solve problems. Especially as engineers, we really like finding solutions; that's kind of our business. So whenever you hear that there's a unique problem, it becomes a challenge—can we create some kind of solution for that problem? I think that attitude is very present all the time here.

"Also, one of our big assets is FirstBuild, which is a special place and really helped us get this thing off the ground. We created FirstBuild to be what we call a co-creation community. I don't think any other company has something like what we have here. It's completely owned by us, but it's on the University of Louisville campus. I started it about six years ago.

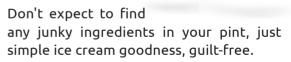
"Innovation is a big deal for companies. It's important for a



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company to innovate better than its competition. I've been working in R&D forever, and typically we innovate in a room on our own. We think about a good idea, and then we innovate on it, make a patent, etc. But it never really worked that great. First-Build was put together under the new concept of innovating with users. The idea is that it's completely open to the public and

anyone can go in there. It's about taking any kind of low-volume product to market. If you come in with some kind of idea, we'll help work on it.

"When I met these gentlemen from Zman Technologies, I realized that it was perfect because this is what FirstBuild was created for. Many of our early meetings were at FirstBuild, where we spoke about how we could co-create home appliance products together. We couldn't have done this on our own; we needed to work together—to get together and think, talk, discuss, and come up with solutions. That's the real value, and that's why it's so special.

"In the past, the Jewish community might inform every manufacturer of their requirements, and we would all meet the requirements and think everything was good. But to me that never makes a really good solution. So how do we get together and understand the problems, the issues and what the best solution is?"

"There are many different niche communities in the country and in the world," I point out. "Are there any other groups that are accommodated this way?"

"Not like the relationship that we have," he says, shaking his head. "There are certain areas we're looking into—the blind and disabled communities, for instance. But it's tricky because they aren't really an



organized, unified community, in the sense that everyone's needs differ, so it's somewhat harder to really address those needs."

"Are there no associations for blind people?"

"There are, and we work with them. In Louisville, there's the Braille Society. Most of the braille books in the country are made here in Louisville. When there are places like that, we like to engage with them."

"Obviously, the rabbis will bring in many customers who will buy GE products," I say. "But aside from the business aspect, I understand that you have a personal interest in this, and you've gone above and beyond to make it happen. Can you elaborate on that?"

"When we started this venture, we never really spoke about business; we started talking about problems," Nolan explains. "The issue raised was that the Jewish com-

> You start a plan, but then something happens. A hurricane hits Florida, and suddenly there's a huge market need.

L-R Duane Tobbe, Tim Vebbert, Shloime Zionce

munity wasn't really satisfied with the way products were working, so we said, 'Let's work on solving those problems.' This relationship has always involved solving problems. Business is business, but that isn't why we did it. We started with the question 'How do we enable people to have a better Sabbath?' It was never about making more money through the community. That wasn't

what guided this relationship.

"I've always believed that if you do good things, then things will take care of themselves. If you have the right intentions and are out there solving problems, people will value those efforts and you'll be successful."

"Do you have any advice for people going into business?" I ask.

"You have to do something you believe in," says Nolan. "The reason I came to the appliance business is that I think it helps people. There are a lot of businesses where you can make a lot of money, probably more than you can make in the appliance business. But I like what we do. If you think about what this business was founded on, it was about solving problems in the home. The washing machine has been a miracle—it has allowed people to have freedom and get time back in their lives.

"The reason I've been driven is that I've felt good about my purpose. To really do well in business, you have to believe in the purpose of your business, and then you can put your passion into it. I've always worked on things I'm passionate about. If you're doing a job and you aren't passionate about it, it's very hard to excel. You spend more time at work than anywhere else, and if you don't like what you're



With a letter from the OU thanking him for the work GE has done for the Jewish community

doing, it's going to be really hard to succeed because the work can be very demanding. I think that's true for any entrepreneur and any guy in a company—first make sure you believe in it and are passionate about it. My advice to everyone is to do something you love, and then you'll be good at it. If you don't like it, it's very hard to do a good job."

"Can you share a crisis you had in the business and how you overcame that?"

"Business constantly throws curve balls. People like to have lots of plans—five-year plans, business plans, strategic plans. The world is becoming very dynamic. You start a plan, but then something happens. A hurricane hits Florida, and suddenly there's a huge market need, but we don't have the stock in that area. We have to redeploy all the stock there, and we have to mobilize everyone quickly.

"Another example is tariffs, which are a big issue in the US right now. When we put our business plan together, those tariffs weren't even thought of, and suddenly there are tariffs on the products, which changes the numbers. A lot of the parts in the factory you just visited are made in China, and we're dealing with tariff pressure, so we have to change quickly and

modify things. You have to have a good, strong organization, and then you can deal with all kinds of problems.

"There are crises every day. Some are big ones. Four years ago a warehouse burned down, and it was stressful because we had to keep the factories running because of our employees' livelihoods. It's very important for us to get the products to our customers, but it's also important for us to provide our employees with jobs. When you have a good organization it allows you to make a crisis not really be a crisis. Things are always happening, and we're always reacting to some kind of problem.

"I've actually come to appreciate a crisis because if your team is better at dealing with a crisis than the other team, that's when you can make advancements. If everything is predictable and steady, it's very

"You have to believe in the purpose of your business, and then you can put your passion into it." hard to outperform others. If you have a good team that can work together, stay calm, and respond well together, then sometimes these are opportunities and not crises."

"Are the tariffs helping you at all in the sense that people may be looking to buy locally?" I ask.

"I think that in general they hurt. It's a form of tax that you have to deal with. The problem with the tariffs isn't as much the tariffs themselves as the fact that they aren't predictable. If we know that the tariffs are here to stay, we're okay. We'll learn how to deal with it. We make most of our things in the US, but our supply chain wasn't set up for the tariffs, so things have to move around.

"What business hates the most is unpredictability because you want to know that when you're setting up this location, it's going to be good for the next month or year, and right now that's not the case. So for me, the tariffs aren't about money but about unpredictability. If you want to plan a trip somewhere but you don't know how much the ticket is going to cost, how are you going to plan? If you know how much it is, even if it's expensive, you can save your money and plan it."

"It's easy to see that you're a leader," I note. "It's clear that when you walk into a room, you command respect. How do you think you developed those qualities, and what tips would you give to other managers to keep their teams happy and driven?"

"I don't know if they're always happy," Nolan answers with a laugh. "I feel that it's always very important to understand what you're asking people to do. I know this business. I've been

here for a long time, and I understand what it takes to design, make, and distribute a product. If you aren't asking for something unreasonable, you'll be okay. People understand that it's being asked of them because it needs to be done, and there's a reason behind it.

"So the first thing is respecting everyone. You have to respect individuals. I joke around a lot with everyone, but they know that in the end, I respect and value the jobs they do. Too often in business there are people who are in leadership roles who don't really understand what they're leading. They never know if they're asking the right questions or asking people to do the impossible. Once you ask someone to do something impossible, you lose their hearts and minds. People think that if they're leaders, they can go in and run any kind of organization, but I don't know if that's true. I think you'll get into trouble if you try leading something you don't understand "

I'm curious if Nolan has ever attended a Shabbos meal.

"Yes, when I was a kid, because I grew up with a lot of Jews," he says with a smile. "They weren't Orthodox families, but they did practice. There were two years when I spent a lot of time with two Jewish families, and they helped me out a lot. I grew up



Roman Catholic—I'm Irish—but it was very interesting to see what it was like inside a Jewish family, the traditions and differences. I think that helped open my mind to different things. It's very interesting to see how your parents act, but it's also interesting to see what it's like in someone else's home. How do they live? What are their parents like? How do they treat their children?"

"Do you think you have a different perspective now that you've had the experience of working with the appliances?"

"I learned a lot over time because there were times when I didn't understand what I was seeing; I just knew that things were different. I was in Central Park two weeks ago during the holiday when you walk

"If you have a good team that can work together, stay calm, and respond well together then sometimes these are opportunities, not crises." around with the palms [Sukkos], and I saw a family that looked very joyous celebrating the holiday. I went over and asked about the palms, and they were really pleased to explain that they were celebrating the holiday. You could see how much enjoyment they were having as a family. They were surprised that I stopped to ask them about it because I was running through the park, but it was very interesting for me.

"I think. I've learned a lot, and the team here has really enjoyed the exposure to the Jewish community and learning from the rabbis. I knew a little about the Jewish community, but a lot of the people on the team didn't have much exposure because the Jewish community in Kentucky is very small. That has been an unexpectedly enjoyable part of this because there are so many people who now want to get involved and learn.

"What we're doing seems a little contagious, and it's fun to see this thing moving on its own without my having to get too involved. You can see people wanting to find a solution. If you're looking for an example of a good partnership, I think this is it," he concludes with confidence.

As we leave the GE campus and head back to the airport, Eli Antebi shares a remarkable incident with me. "I was once in a meeting with some of the GE engineers and we were discussing a solution for a cooling system on one of the appliances. I came up with what I thought was a way to solve the issue, and I shared it with the engineers. One of them looked me in the eyes and said, 'But Rabbi, wouldn't that be a grama?' I thought about it for a moment and said, 'You know what? It would.' We had to find another solution."