

PINBALL

M A G A Z I N E

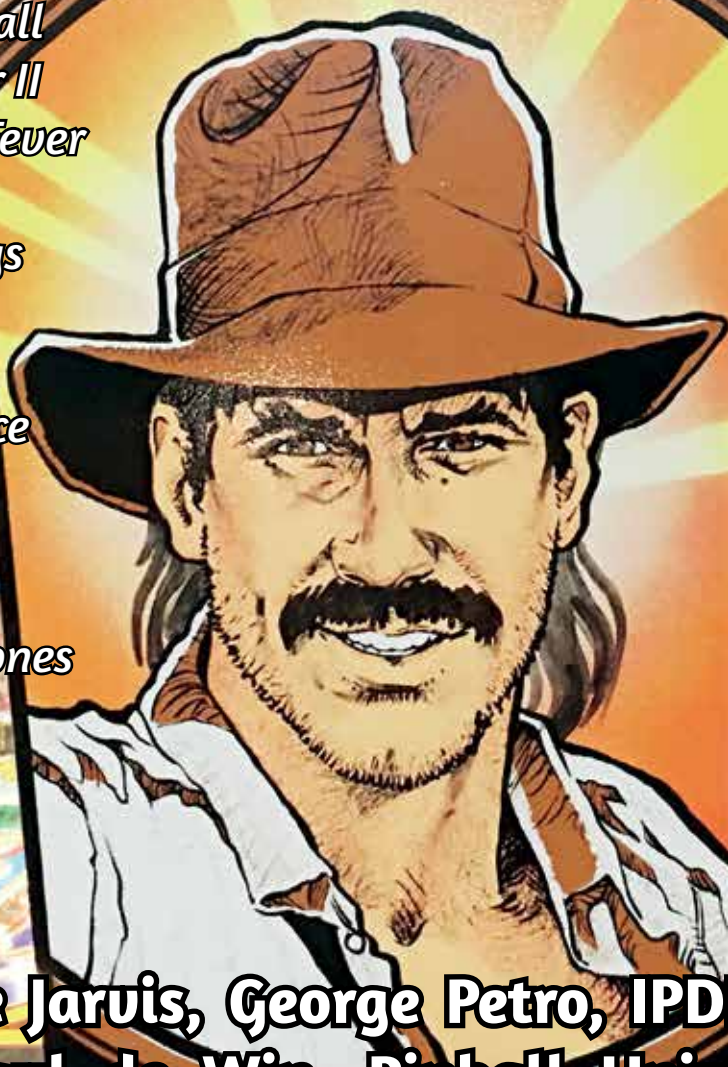
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**SPECIAL:
MARK RITCHIE**

Thunderball
Firepower II
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Plus:

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Dallas Makerspace' VECTOR Committee

Interview: Jonathan Joosten, Copy editing: Erik Kos, Gisi Cannizzaro



Shawn Christian (37), certified pinball hoarder and one of the original founders of the Dallas/Fort Worth Pinball & Arcade Club. Actively participates in anything pinball-related and served as the floor manager at the last three Texas Pinball Festival shows, as well as partial organizer of the TPF swap meet. Has been active in the pinball hobby for seven years and currently owns approximately 75 pins and other arcade games . . . a number which is destined to keep growing.

Nicholas Schell (44), a.k.a. Nick Dangerous and founder of the VECTOR Committee. A lifelong rebellious arcade geek who formally joined the pinball hobby in late 2013. Owns 20 classic EM's and three solid-state pins, following a "best of both worlds" approach to restoration using old and new technology. Tends not to trust anyone who doesn't like Led Zeppelin. Has also been known to appear in public dressed as Lo Pan.

Jayson Woods (29), current chairperson of the VECTOR Committee. Recently joined the double-digit club with 10 machines in his collection including his first EM-rifle game. Also the chief "Imagineer" of the Scottish Rite Children's Hospital which features whimsical art installations, train sets, interactive games and other unique amusements.

At the 2016 Texas Pinball Festival, the VECTOR Committee (Vintage Electromechanical Conservancy of Technology, Operation, and Restoration) of the Dallas Makerspace showcased about a dozen games restored by its members in-house. Two of the machines (*Mortal Kombat X* and *Snow Derby*) won Best in Show category ribbons and two others (*Time Warp* and *Freedom* prototype) won runner-up ribbons as well. In order to find out more about the Dallas Makerspace and the VECTOR Committee, *Pinball Magazine* interviewed VEC-

TOR founder Nicholas Schell, Shawn Christian, and Jayson Woods VECTOR Committee Chair.

PM: Jayson, for those that have no idea what a Makerspace is, could you briefly explain the idea behind the Dallas Makerspace?

Jayson Woods: The easiest way to describe a Makerspace is that it is a space for sharing tools and knowledge. We all contribute our resources so that everyone can do what they want to do. Our members pay about \$50 a month a piece and are granted 24/7 access to all of the tools and the facility itself.



Photo credit: Andrew LeCody

One of the workshops at the Dallas Makerspace

Classes are frequently held on a number of subjects and are usually free to attend.

PM: And the money that comes in is used to pay for the rent?

Jayson Woods: Rent, more tools, upkeep, consumables, etc.

PM: So what kind of tools do you have? What can people come in for?

Jayson Woods: We have a wood shop, an electronics room, which is really great for the solid-state games, 3D printing, creative arts, a digital media room, machine shop, jewelry (small metals), automotive, science, metal shop, welding area and two laser cutters.

PM: So basically anybody can become a member, bring in whatever they want to work on and do that whenever they feel like it?

Jayson Woods: Yes.

Nicholas Schell: Joining a Makerspace is an especially good option for apartment or condo dwellers because they typically do not have space for a workroom or a garage full of tools. Plus, it offers some space to spread out and work on a project. That's why a Makerspace is an ideal location for "arcade tech." The physical proximity is essential for socializing and learning. Without it, the collaboration aspect disappears.

PM: But there's no chance of surprises like someone doing an unwanted paint job on a project you brought in because they felt it would look better that way?

Jayson Woods: No. When you bring something here your project is yours alone to work on. You put your name on that project and people here leave it alone.

Nicholas Schell: The Makerspace is a collaborative workspace but this doesn't necessarily mean a free-for-all. As Jayson mentioned. That being said, the Makerspace does have a kind of hobbyist vibe to it, which is part of the appeal. It isn't necessary to bring in a whole pinball machine . . . a member might only bring the head or playfield to replace some lamp sockets. Or repair parts on a smaller scale.

Jayson Woods: As far as our pinball machines go, we have never had a problem with anyone coming over to our area and

messing with them in any way, except to play them. Normally we have a sign on them indicating whether it is a playable machine.

PM: So you offer all sorts of tools for all sorts of purposes. How did the pinball machines get into the picture?

Nicholas Schell: I grew up with three pinball machines in my childhood home (Gottlieb *Flipper Fair*, *Playball*, and Williams *Doozie*), but didn't start tinkering with them until late 2013. At the time I was looking for a new hobby and my father still had those same pinball machines in storage. So I moved one into my condo and started Googling how to work on them. I joined a few online forums and started tinkering.

Then a friend of mine suggested I join the Dallas Makerspace and get involved. I brought my pinball machine to the space and continued to work on it there. It began to get a lot of attention quickly. Everybody was fascinated to look under the hood at all of the electro-mechanical guts and see them working. As the progress continued, one machine became two, and two became three. It was exciting to see all of my childhood games reunited under the same roof again, being enjoyed by all and people photographing themselves with their high scores. The Makerspace now had a defined "pinball zone" which quickly became a social place to gather and play.

A few months later, a member came up to me and asked, "Hey, how much does it cost to get into this hobby?" Soon afterward he bought a machine of his own and began to learn the restoration process. Then another member did the same. Then another! We were quickly running out of space. Fortunately, the Makerspace was already on the verge of moving into a much larger facility and did so in late summer, 2014. It is now one of the largest Makerspaces in the U.S., if not *the* largest.

Today, VECTOR is an official committee with its own tools and designated floor space. We can comfortably fit six or seven pinball or arcade machines in our work zone. Due to the amount of space and time required to finish a project, I began to impose a limit on how long a machine could stay on the floor. The initial commitment was eight hours a week, with a 3-4 month completion timeline. Of course that is not how it panned out! We've had to ask a few stragglers to move their



Part of the TPF16 lineup: Sinbad, Slick Chick, Flipper Parade, Mibs, King Pin, . . .

machines offsite when their projects came to a halt. Three to four months is the ideal timeline, but typically it winds up being more like six or more. [Laughing]

PM: VECTOR at TPF showcased mainly electromechanical games, but it's more than that, right?

Jayson Woods: Yes, it's a little bit of everything. We have EMs, we have solid-states, we have people who are building arcade cabinets. Shaun has a '62 Bally *Spinner* in there, some EM rifle games, too. We even have someone reworking an old telephone switchboard. The plan was to turn that into some sort of game, like a murder mystery, or something like that.

PM: How big is the VECTOR Committee?

Jayson Woods: We currently have about 20 people. In terms of floor space it's a little under 300 square feet. Which isn't that much, but we accomplish a lot with the space we have.

PM: Are people helping each other out, or are they mostly working on their own?

Jayson Woods: We absolutely have people helping each other out all the time. One of our members, Chuck, has really gotten the hang of it. He's in his seventies and just got into pinball . . . and is doing amazing quality work.

Nicholas Schell: Yeah, Chuck has developed a deep interest in the hobby, which has really taken off. His *Sinbad* machine has all-new lamp sockets, a painted backbox board, a custom metal spinner, "stealth LEDs" – and plays amazingly well. Very impressive attention to detail. That's what's so cool about pinball. It hooks people of all ages.

PM: Different people have different ideas on restoring their games. For some, getting it to work will be enough. Others won't stop until it looks "better than new."

Jayson Woods: We see all levels here. We have Nick, who is going for better than new, and Shawn, who is just happy with it playing. We try not to look down upon one another when they don't meet our standards. We accept everyone has their own goals in mind. But regardless we try to help them as best as we can along the journey.



. . . 2001, Snow Derby, Freedom, Top Score, Yukon and World Cup Soccer

Nicholas Schell: We're just happy to have them here. It's not a contest. It's just fun to work and play together.

The pinball hobby is very similar to the classic car/restoration hobby. It's all about parts, techniques, collecting, and history. Which are the good years? The best themes? The best methods of restoration? Should you leave the original patina? Or repaint it? In the original colors or new ones altogether? Everyone has their own opinions, as do I, and I think that will always be the case. Collecting and restoring tends to be a very personal endeavor.

I believe if you take the time to get inside of the mechanisms and put your hands on every little moving part and develop an appreciation for why these things were designed to do what they do, you will develop an extensive mechanical aptitude and care more intimately about how everything is supposed to work. The popular television show *Rick's Restorations* constantly mentions "attention to detail" as the basis for excellence . . . to which I would agree. It is the same for pinball.

Shawn Christian: I had my *Slick Chick* clearcoated. It's now very fast. I like my games to be in nice condition and play well, but I'm not so hardcore that they have to be factory original on everything. Some games I give the full treatment to, some other games not so much. It depends on the game. If it's one I'm planning to keep long term, like *Slick Chick* – which was on my bucket list – it's worth going all the way. But if it is a game I don't plan to own forever I don't give it as much of an upgrade or restoration.

PM: The VECTOR Committee display at the 2016 Texas Pinball Festival, was that the first one?

Nicholas Schell: Yes. 2016 was the first year we were officially branded as VECTOR at the festival and presented ourselves as a unified team. I brought a few games in 2014 and 2015 as well, but our committee was in its infancy back then. Nowadays we have a lot more momentum and people are asking, "Hey, what's this VECTOR thing I'm hearing so much about?" We've met a lot of cool people ever since.

PM: How did that show work out for you guys?

Jayson Woods: It was an amazing experience! TPF 2016



Top row left to right: Chuck Baber, Rodney Black, Shawn Christian, Nicholas Schell, Nick Sainz, Stacy Wylie, Stephen Wylie.
Bottom row: Jayson Woods, Paul Wilson

was my first. I didn't know what to expect. Needless to say I learned quite a bit. Next year I will be better prepared and not wait until the last minute. I will expect some last-minute craziness and Murphy's Law to come into effect.

PM: What pinball games did you bring to TPF 2016?

Jayson Woods: VECTOR featured a Bally *World Cup Soccer* and a solid-state Gottlieb *Sinbad* as the only solid-state games. The rest were all electromechanical: Gottlieb *Slick Chick*, Gottlieb *Flipper Parade*, Gottlieb *Mibs*, Gottlieb *King Pin*, Gottlieb *2001*, Gottlieb *Snow Derby*, a rare Bally *Freedom* prototype and Williams *Yukon*.

PM: Nicholas, while a couple of games brought in by other VECTOR members had some issues, your games held up extremely well during the show. What's your secret?

Nicholas Schell: [Laughs] What I do is probably borderline obsessive compulsive disorder. I fully disassemble a machine down to the last screw and then put everything back together "like it should be." This is the method we teach at VECTOR when a newbie brings in a machine for the first time. We have them go all the way through the machine, head to toe. Taking apart every relay, polishing every contact, tugging on every solder joint to ensure it isn't cold soldered, disassembling/reassembling every stepper unit. We go through the entire thing . . . hence the 40-hour minimum rebuild time for the mechanical portion alone. It may seem excessive, but it is a

great learning experience. And, as it has been said many times before, the proof is in the pudding.

If you look towards the future of pinball machines, 50 or even 100 years from now, EM's probably have the best chance of surviving due to their rugged simplicity. My goal is to reset the odometer back to zero after 40+ years of use so that they will survive into the next generation and continue to delight people.

PM: I understood you clearcoated the playfields of your *Snow Derby*, *2001*, and *Freedom*. Is that something you can also do, or learn, at the Makerspace?

Nicholas Schell: Unfortunately, not at this time. The Makerspace does not currently have a paint booth to do this kind of work. Working with clear coat and hardener is a toxic process, which requires extensive safety protocols. I do not personally clear coat my own games. That task is farmed out to a local playfield restorer. I'd love to learn more about it, but I have about 25 machines in my personal collection to finish and just don't have the time right now.

Snow Derby and *Freedom* won Best 1970s EM and Best Runner-Up Restoration at the show, so I'm glad to see the judges are not anti-clearcoat. I personally think a professionally clearcoated EM is not only a thing of beauty, but also a matter of practicality. It protects the artwork, levels cupped inserts, looks incredible, plays smoothly and negates the need

restoration

to wax (Novus 2 with microfiber towels are all you need). Both machines also had my “stealth LED” recipe installed, which preserves the original look. I have a thread on the *Pinside* forum with more details about it. It’s a “best of both worlds” approach.

PM: Would you say that within the Makerspace, pinball is growing like a virus infecting more and more people?

Nicholas Schell: [Laughs] Yes, most definitely! We’ve had a few people join VECTOR after touring our facility, but it really has a magnetic effect upon existing members of the space. Most of whom come over to see what we are doing and think, “Hey, I want to work on that, too!”

Shawn Christian: Usually when we do tours they stop by our area for a few minutes because people want to know what we’re doing.

Nicholas Schell: It’s true, we function a lot like an arm of the PR committee. Visitors love our stuff. Sometimes during the tours people will get the impression we are a restoration shop. They ask, “I have a machine like that at home. If I bring it here will you guys fix it for me?”

Jayson Woods: Of course that’s not how it works. We want to teach you how to do it yourself!

PM: So how is this teaching done? In classrooms, or one on one?

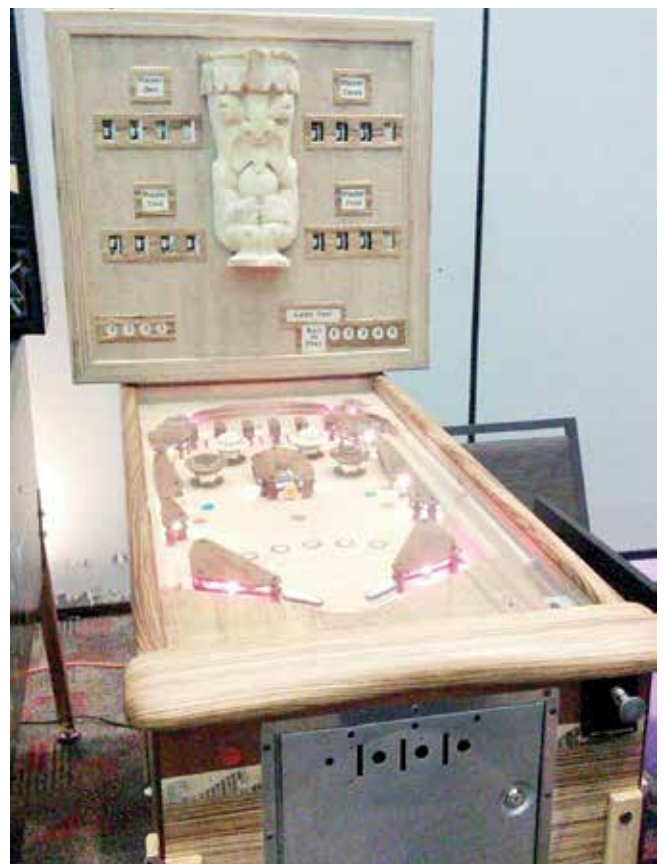
Jayson Woods: It’s a little of both. When we do arcade restoration, we will usually hold a class so we can teach more than one person at a time. But whenever someone comes in with a question of their own we will help them one on one so they can understand what they need to do. If there is another person with the same kind of problem, we will teach them as well. It’s just teaching as needed, however it is needed.

Shawn Christian: We’re there most evenings, so if someone needs help we will stop and assist with tips on how to resolve the issue or troubleshoot it.

PM: Any tips for pinball enthusiasts who might be interested in joining a local Makerspace?

Jayson Woods: There’s a ton of information available online. We found a group called PinballMakers who have a great logo and such. There are also a lot of people who document their stuff on *Pinside*. The problem is that all of the online stuff happens in sort of a vacuum. You don’t have this social connection where people actually come together and do the work. That’s what’s so great about having a Makerspace. You get to have that experience and sometimes entirely new things come out of it.

For example, one of our VECTOR members, Paul Wilson, is not a pinball person. He’s more into framing and fine art stuff. He’s now re-theming a pinball machine in a Polynesian tiki



Top: Paul Wilson and his re-themed Student Prince, at TPF.

Below: The game as of June 2016.

bar style. It’s looking absolutely incredible and it’s coming from a direction that no pinball person would have thought of. At the Makerspace you have this fertile combination of people and ideas coming from all directions. People can contribute that energy into pinball in new ways. It’s like working within an idea generator and great individual projects can come of it.

But to answer your question, I think if you have a pinball machine that is mostly working and are willing to tinker around with it while sharing your findings with others, then it can turn into something like VECTOR. The key is bringing people together in a fun way and making it a social experience. Why not bring your machine and turn it into a group project?

PM: What do you think of the EMs displayed at TPF?

Shawn Christian: Over the last several years I started bringing



*Mortal Combat and Snow Derby were awarded Best in Show ribbons at TPF 2016, Freedom and Time Warp were runners up.
Left to right: Nicholas Schell, Rodney Black, Nick Sainz, Shawn Christian*

a lot of EMs to the Texas Pinball Festival. I think it started a trend. We have since about doubled the number of EMs that are at the show. It used to be very solid-state heavy. Nowadays there are a lot of EMs and many are in top-notch condition. The bar goes up every year on the variety and the quality of the games. Usually there are some terrific woodrail restorations at the show, too.

Nicholas Schell: I can remember attending TPF for many, many years before I actively got into the hobby of fixing and restoring pinball machines. I remember I always loved the way the EMs looked and sounded on the festival floor. But in those earlier days – when I was just a player – I was always annoyed by the fact that so many of them had sloppy mechanisms, reels that wouldn't turn, weak flippers and pop bumpers – just so many problems. Ultimately, the EMs drove people away because they set such low expectations. Which is sad, really, because EMs are the best! That's why I want to deliver the best EM experience I can for others. Especially since, nowadays, so few people even remember how fast and snappy they played when new.

Shawn Christian: EM games look simple, and the rules are very simple and straight forward, but these games have been designed to eat your money. They really make you work for it. Recently I started looking into EM rifle games and other old EM arcade games. I just enjoy the old games a lot more than the new ones and they're a lot more affordable when you're getting into the hobby.

Shawn Christian: One interesting thing about the members at the Dallas Makerspace, especially in VECTOR, is how many have a complementary background or technical skill. There are a lot who work in IT with networks, computers, programming, electronics, facility maintenance and so on. So we have a lot of technical competency in the mix. Generally the kind of people who are able to pick up a skill rapidly and don't have a lot of the issues you might encounter with people who have no clue about what they are doing: just tearing something apart, breaking it, putting it back together wrong and it goes up in smoke.

PM: All three of you guys have been doing pinball restorations at VECTOR on your own games. Are there any plans to take things a step further?

Nicholas Schell: Eventually, yes. I have a few custom games in mind that I'd like to develop once I get past the big restoration phase. From a psychological perspective I've been thinking about what exactly a pinball machine is. Like, what is so compelling about the good ones? What is it about the geometry? Is it about the flow? Or the shots? Or the overall pacing? Does it oscillate between fast and slow play styles? Is the lighting compelling? What makes it so, and why?

Pinball itself is a microcosm of the entire entertainment business. The lights, the callouts, the visceral appeals to the eye and ear – you see it in public kiosks, marquees, light displays – it is designed entirely just to call attention to itself. That aspect fascinates me. Especially when thinking about the differences between EMs and solid-state games. EMs are like slot

restoration

machines, whereas solid-states are more like sitting down and committing yourself to a Netflix series. Different reward systems, different design aesthetics. Interesting stuff to ponder!

Shawn Christian: All three of us have various ideas for building custom games that we'll probably start working on as soon as we get beyond a certain point in our restoration queue. It will be an interesting process to get ready for the 2018 edition of the Texas Pinball Festival.

Nicholas Schell: I will use modern technology, but gear the aesthetics towards the EM game play style. I think we're way overdue for something like that. Stern was attempting something along those lines with *Whoa, Nellie!* which has terrific artwork and sounds, but the gameplay itself feels like it is missing something.

Jayson Woods: It should have had a real bell instead of a sampled bell sound. Or real chimes.

PM: And real score reels.

Nicholas Schell: Yeah, the servo-based score reels don't have that TWHACK that solenoids do. There's something really nice about that.

Nicholas Schell: When Ben Heck showed up at TPF in 2015 I – half jokingly – remarked, "Hey, you're the patron saint of VECTOR!" Ben is certainly a hacker extraordinaire. He created *America's Most Haunted*, a desktop-sized pinball machine and several other pinball projects including the ambitious (and hilarious) Bill Paxton machine. He's way ahead of the curve and an inspiration to all of us.

Ironically, I think virtual pinball is what will bring people back to EM games more than anything else. On virtual platforms, like Farsight's excellent *Pinball Arcade*, the EMs play perfectly. Which is a rare treat considering how few actually do play that well. New generations will be in for a treat when they see the real thing in person.

Shawn Christian: The younger generation, who did not get to experience the arcades and games back in the heyday, are discovering pinball through games like *The Pinball Arcade* and various other pinball apps. We have noticed a large number of people entering the hobby because they got hooked on playing pinball on their computer or their phone. Suddenly they're at a pinball festival, buying machines and learn how to fix them. So it's definitely helping to bring another generation into the hobby, which is what is needed if you want it to survive long term. Especially with the old EMs. The people who have the institutional knowledge to keep them working or repair them properly are getting old. It means another generation of people will need to develop the skills to fix them and teach others. Without that, EMs are destined to become a static display in a museum.

Nicholas Schell: Speaking of which, we recently hosted an exhibition at the Fort Worth Museum of Science and History. Of all the exhibits featured, people remarked that the pinball area was their overwhelming favorite. Which was great to hear and proves our point. People of all ages still love pinball!

Links:

https://dallasmakerspace.org/wiki/VECTOR_Committee

<https://www.facebook.com/groups/DMS.VECTOR>



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