



# Interview with Richard Farrell aka Vyper68

20 questions to an electronics technician: an important figure in retrocomputing, the kind of expert we turn to when our beloved vintage systems need repairing

by David “Cercamon” La Monaca

## Introduction

Meeting electronics technicians, repair specialists and experts in retro hardware means entering the operational fabric of computing history. Their presence on social media and in specialised communities is steadily growing, mirroring the expanding interest in retrocomputing. These individuals possess a wide range of skills, yet they share a technical heritage that has become increasingly rare for those who study, preserve or simply use vintage systems. The core question is: how can we transmit and document their extensive technical and practical knowledge? Home computers and consoles produced between the 1970s and 1990s continue to function thanks to a fragile ecosystem supported by the experience of those who understand their architectures, components and operational limits. Yet time affects even historically robust hardware: ageing materials, capacitors that lose efficiency, batteries corroding traces, memory chips and TTL logic prone to unpredictable failures. When a malfunction occurs, the question immediately arises: is the repair viable? Spare parts are increasingly difficult to find, costs are rising, and it is not easy to identify professionals or true experts with proper training in technologies that have long ceased production.

In this scenario, specialised repairers play a crucial role. Often working far from the spotlight, they intervene with their wealth of experience and rigorous methodologies: instrumental diagnostics, board analysis, restoration of damaged traces, replacement of now-obsolete components with compatible equivalents. They have become key figures in preserving our computing heritage—custodians of technical and practical knowledge that might otherwise be lost.

For this reason, RMW has introduced a regular feature dedicated to interviews with exactly these experts: professionals and enthusiasts who work behind the scenes of retrocomputing. We have selected 20 questions to highlight the experiences, procedures, challenges and solutions adopted by those who, with competence and method, restore full functionality to the machines that shaped the early digital era.



Fig. 1 - Richard Farrell aka Vyper68

In this interview we meet Vyper68 from UK. For many years now, he has transferred his passion for early home-computing and entertainment systems—together with his knowledge of consumer electronics—into forums and other Internet sites.

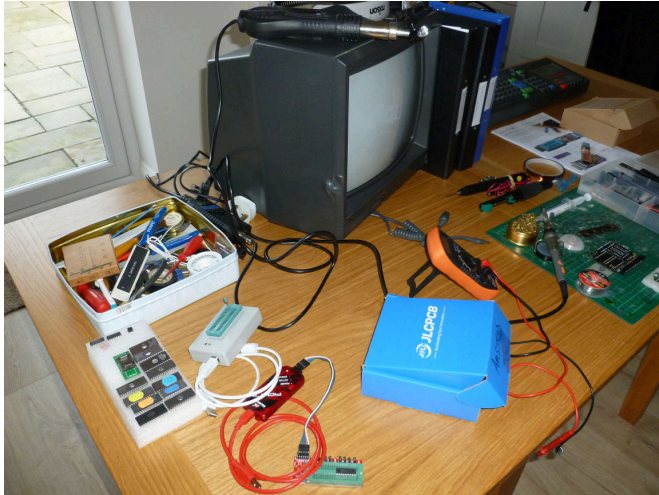
**1. DLM – Let’s greet and thank Vyper68, who has kindly agreed to this interview. First of all, could you briefly introduce yourself and share a few notes about your personal background with regard to electronics and computers/consoles?**

Vyper68 – Hi David, So I was born in Scotland but have spent my adult life in the Northeast England in a small sleepy village called Hurworth. As far as work goes I’m retired now but in the places I did work although I didn’t actually work as an I.T. technician I was often asked to take on that role as I used to build PC’s for people at work and repair older computers and PC’s. So I was asked to look after the networks and the servers at work and





troubleshoot/repair company PC's as an extra duty. I used to enjoy doing that so much I never asked for any extra money! LOL. I had a fairly standard education and I left school with several "O" levels and CSE's including Computer Studies and Physics. I went to college to study Computer science at a higher level as well, but I never went to University as there was pressure on me to start earning money quite early on. So, I went into the workplace instead.



**Fig. 2 - Richard's workbench**

**2. DLM – How did you first become interested in electronics and computers? Which machine or vintage brand do you most enjoy using/expanding/repairing, and why?**

Vyper68 – I was always interested in technology as my father was extremely interested in Science and we used to watch a television show called "Tomorrows World" on the BBC together. I was fascinated on how things were made and the internals that made up devices. I can remember my first memory of taking my Atari 2600 apart to see inside and looking at the main PCB and trying to make sense of it. I was only ten at the time so I didn't really understand what I was looking at but I wanted to. Skipping forward a few years technology had made big steps, and it was then that I saw my first microcomputer at school when my teacher was playing "The Hobbit" on a ZX Spectrum and setting up a computer club. I was later able to get a ZX Spectrum for my birthday and it promptly failed as soon as I plugged it in. In hindsight that RAM had failed straight away. So, we had to go back to the store and get another one and that was when I started thinking about needing to be able to repair any computer I owned myself. We started building electronic projects in the computer club and learning to program. The good thing about the club was there were different computers owned by different students. Oric's, C64's, Atari's and Dragons. Luckily, there was a large amount

of magazines and books available by then and I was able to educate myself to a standard I could repair my Spectrum myself which I had to a couple of times and then other people's computers as word spread.

I have several favourites 8-Bit computers but if I really had to choose it would be the Atari range, particularly the 800XL and secondly the Oric-1/Atmos range. The 800XL is such an elegant design and the custom chipset makes for a really nice machine (except for the BASIC) there are several expansions available for the 800XL/65XE including the Ultimate 1MB which massively expands on the memory and features especially if you use FlashJazzCats firmware. The other computer I have a soft spot the Oric is down to the people and the AY sound chip. I was a member of Oric User Monthly and was able to get a Cumana disk interface, so I was able to use the SEDORIC disk operating system which was my go-to machine for several years even though I also had an Atari STFm back then. Some of the modern era Oric games are of a really excellent quality, they put commercial games from the 80's to shame. I am currently beta testing a new ULA for the Oric which gives the option to have a crisp DVI output so there are also additions to the Oric too, though to be fair that is true for most computers from that era. There are modern disk drive replacements and along with tape emulation devices which make it much easier to use now. The other thing I do like is the Dragon/Tandy computer systems, mainly because of the 6809 CPU and I am trying to teach myself 6809 assembler on my PAL CoCo2 just as a brain exercise.

**3. DLM – What are the most common challenges you face when restoring and repairing retro hardware? In your experience, what types of faults tend to occur most frequently?**

Vyper68 – The most common challenge is sourcing custom ICs for these computers or their peripherals, like the Atari 800XL's ANTIC or POKEY or the Oric's ULA. Don't get me started on Commodore chips! These are long out of production now and the only way to source them is to cannibalise others, which I hate doing. This applies to most computers of that era as most had custom IC's so that is THE biggest challenge. The most common failure I come across these days on the 8-Bit generation is RAM failures. This is not so bad as you can still get NOS 4164's or the other memory IC's you need on the market. The other frequent problem these days are dry solder joints which cause a failure and can be hard to find. I am getting





a lot of Oric-1's to repair with faulty keyboards and they have all been dry solder joints on the keyboard PCB.

**4. DLM – Have you ever completed a so-called “mission impossible”? Is there one success story you are particularly proud of? Could you tell us about it?**

Vyper68 – That is a difficult one to answer as they always feel a little bit like that to start with. There was an Oric Atmos that springs to mind which had been shorted out. The expansion port is an IDC connector and has bare pins exposed and is right next to the 9V DC input you cannot see these when you have the computer on a desk as they face away from you so if you are not careful you can send 9V through the board by touching the DV jack on the pins of the expansion and with parts being 5V only 9V is disastrous. So I had to work my way through it desoldering the logic IC's and testing them, then the main ICs needed removing and testing. I had to rebuild it from scratch. The PAL UHF circuit has a PROM which is impossible to get now but thankfully you do not need the UHF circuit as most people use the RGB output with a SCART lead. So, by the end I had a working Oric minus the UHF so I was quite pleased with that outcome overall.

**5. DLM – How do you source spare parts or original pieces? How difficult is it to find them 30 or 40 years after production?**

Vyper68 – Most RAM comes from some trusted suppliers I have found over the years. There are a few small electronic stores in the UK that sell Logic, RAM and CPUs. There is also eBay as well if you are totally stuck, although I do have a couple of sellers on there I trust as well. I tend to avoid Chinese sites as there is a problem with fake or rebadged chips these days. Things like Disk controller IC's, CPU's or PIA's and AY sound chips are examples I have had issues with. As I mentioned earlier the hard part is getting custom ICs, someone has found new old stock, they have broken down a machine and are selling parts individually or you buy a donor machine yourself. You can in some cases get modern replacement parts like the POKEYMAX or the ORICULA but sadly the situation is only going to get worse as time moves on. The progress of making replacement custom ICs with modern FPGA equivalents is a godsend really and it's something that was not really available a few years ago.

**6. DLM – What role does the retrocomputing community play in your work? Does it help to keep your passion**



**Fig. 3 - Fixing an Amstrad CPC**

**alive? Are you able to attend and comment personally and frequently to posts and questions on forums or social media?**

Vyper68 – Retrocomputing and repairs is a large part of my life now I no longer work and the interaction I get with other people is especially important to me. I have made some great friends over the years through this hobby and. I have often been asked for help on forums and try to help as much as I can, conversely, I can asked for help myself as I don't pretend I have all the answers for all machines. So it's a two-way process. I tend to avoid social media these days so it mainly forums and machine specific websites I use but I enjoy doing that a lot.

**7. DLM – In your opinion, how important is it to preserve not only the devices themselves, but also the software and documentation associated with the hardware (i.e. technical schematics, circuit designs, component tables and specifications)?**

Vyper68 – I think it's vital, the early development of microcomputers in the late 70's early 80's was a massively important point in technology and culture. People were able to have in their home something that had been up to that point out of their reach. The boom of game development, particularly in the UK and I suspect most of Europe can be linked to the home computer boom in the early 80's. I know technology moves on and these devices became outdated but they are part of history and need preserving, especially working examples. The same applies to documentation like manuals, schematics as well as magazines with articles and user made software. We have already lost a lot of this to time which is a shame. We do have a lot of people out there trying to keep these machines working and designing new software for them so that's good.





**8. DLM – In recent years, have you noticed a renewed interest in retrocomputing/retrogaming among younger generations and beyond? Who typically approaches you for technical advice or repairs?**

Vyper68 – I think there is a lot of interest in retro gaming these days. There was always a hard core group that were invested in their particular formats but people have more disposable income and have started to buy the old computers they used to own partly down to nostalgia I suspect. The sad side effect is that supply and demand has made prices increase steeply over the last few years. With the mini consoles and emulation, it has allowed people to see what all the fuss was about as well. You only have to look on the internet and YouTube to see this. As I said I think retro computing tends to be people getting back into the machines they had as children or they never stopped and have used them all the way through, however, I do think the gaming side is more prevalent though as most people who had a home computer back then spent a lot of time playing games on it despite what you told your parents.

One of the things I get these days is I bought this computer on eBay and it doesn't work help! That tends to be new users who have bought an "untested" machine off eBay which equates to plugged in and didn't work so listed as "untested". Regulars already know what they are in for but new users can feel a bit annoyed about it but regulars still also come to me for repairs.

**9. DLM – What is your opinion on software emulation and FPGA-based reproductions of old systems? Do they support or hinder the preservation of original hardware?**

Vyper68 – Aside from the piracy argument of emulation I still think it is in some ways a good thing. Some of these old systems are quite scarce and therefore very expensive now, putting them out of the reach of most people. So emulation enables people to experience these rarer systems and see what all the fuss was about. I think for an historical perspective it is important to preserve old software as well. There has already a lot of old software as listed as missing in action on archive websites which is sad. Emulation and modern FPGA remakes also enables people to save wear and tear on their original hardware as well so that's a plus as well, although running software on real hardware has a definite charm which these modern systems lack in my opinion. FPGA reproductions of old systems like the C64 mini or Atari mini fall into that category I guess, they are not the same as using a real

64 or 800XL but they are not supposed to be I guess. So I suppose the short answer is I support the idea.

**10. DLM – If you could restore one legendary item—perhaps for a retrocomputing museum or even for yourself—which would you choose and why?**

Vyper68 – I would like to work on a Computers Lynx or a SAM Coupe computer or an Atari Falcon030. I owned a Computers Lynx and a SAM back in the 90's but sadly we were burgled and a lot of my old computer kit was stolen and those were among the items taken. I would like to have worked on the Falcon030 as it was Atari's last computer and it sounded like a fantastic machine. I have used Hatari to emulate one and it seems like a real beast. The prices for all three machines these days are stupidly expensive so I don't think I will ever own one again or in the case of the Falcon at all but as I said there is always emulation, Simcoupe is a great SAM emulator and Jynx is a Java based emulator of the Computers Lynx.

**11. DLM – Which basic hardware and software tools do you normally use to diagnose faults in vintage systems? What is your primary method of intervention?**

Vyper68 – So I have the usual kit you would expect, Soldering Iron, Desolder pump/braid, Desolder gun and I am hopefully getting a Hot Air station so I can work on more modern systems and consoles. I have a multimeter, logic probe and a small oscilloscope.

My main thing is multimeter to start. I always do the same thing my mantra is ASAP ( Always Start At the Power ) so that's my main starting point. Normally at a lower voltage with a modern power supply. Once passed the power regulator I may bypass that altogether and inject 5V directly onto the board. Once you have 5V on all the chips then you can get a look at the display which also gives you an idea as to what might be wrong and I also give the RAM a quick touch as well. If a RAM chip has failed it will probably be incredibly hot. So they are how I start off.

**12. DLM – When working on a historically significant or valuable motherboard or PCB, do you prefer to preserve it as it is, or do you perform modifications/adaptations in order to fix it?**

Vyper68 – I always try to preserve them as original as much as possible when repairing them but there are service modifications that were issued by the manufacturer too. I will always fit them unless asked not to. For example,





the Oric-1 has a fault where the ROM will eventually destroy the AY sound chip (according to Tangerine Computers) and they released a service bulletin to fix this. I always fit this if I find an Oric-1 without it. So some of these are important modifications released by the manufacturer and to my eyes still keep the machine original and also better. Homemade modifications people designed and put online I don't bother with for customer machines.

I might modify one of my old computers like my VIC-20 to support S-Video for a better picture. Personally, I like to have one stock machine and one that I can modify so I can enjoy both worlds. It's not always possible to do this so I do have some that are modified but these are my own and tend to involve improving the video output to help connect them to modern TV's, I would not do that for someone else unless they specifically asked for it as some people want upgrades fitted as well as repairs and I will basically do what the customer wants ( within reason )

**13. DLM – How do you deal with oxidation and contact degradation after decades of inactivity? What other faults are the most frequent in your experience for old computers and consoles? What maintenance techniques do you typically recommend to those who receive a machine from you after repair?**

Vyper68 – If you have some IC's that have oxidisation on the legs from heat or time, I will use a very mild abrasive to clean the oxidisation off the legs and if the socket is in poor condition I will replace it. I would use contact cleaner for switches and edge connectors. I also use a rubber to clean edge connectors on computers and cartridges; it works surprisingly well.

As far as computer cases I don't tackle discolouration of the plastic as I am not convinced Retrobrighting is good for the plastics in the long run. So if a case is yellowed it stays as it is. My VIC-20 is a case in point. It is very yellowed but I wouldn't Retrobright it.

As I said previously RAM is a very common failure on 8-Bit computers along with dry solder joints, with consoles it can be all sorts of things. They have a lot of custom IC's and ASIC's which can fail. I suppose if you have just bought a machine of eBay start with the PSU and check the voltages are good. If possible use a PSU at a lower (5V) supply to test the voltages on the PCB or inject 5V onto the board and bypass the PSU completely, give it a good clean as well and check for continuity and dry solder joints. Check the RAM to see if any are insanely hot and

if they are remove them and test them replacing as needed.

**14. DLM – Have you ever had to recreate or replicate components that are no longer manufactured, or improve original ones with modern designs? If so, how did you approach it? What sources did you use for documentation?**

Vyper68 – That is something I have never really gotten involved in, the creation of a modern FPGA replacement for an old IC is not something that interests me and there are smarter people than me out there doing just that. I prefer repairing rather than designing.

**15. DLM – Do you ever use FPGA-based hardware emulators or reverse-engineering tools to test obsolete parts? In your opinion, what are the fastest diagnostic tools?**

Vyper68 – I don't have anything like FPGA hardware but I do use a RAM tester and a Logic chip tester for some of the diagnostic tools I use and they are very quick.

**16. DLM – How do you handle data preservation from fragile magnetic media (floppy disks, cassettes, hard drives, tapes)? Do you select the most suitable method each time depending on the machine or system you are working on?**

Vyper68 – I have a few tools to use when trying to dump a disk or tape. It depends on the media. For floppy disks there is hardware you can use (Greaseweasel, SIO2PC, XUM1541) and tape is trying to copy a file using software like Audacity and then cleaning the audio input. I don't do it that much anymore and a lot of people use modern devices that emulate these devices like Fujinet or Pi1541 or the TZXDduino.

**17. DLM – What is your opinion on using modern capacitors and electronic components to replace original ones during repairs? More generally, do you think common repairs today are easier/faster than in the era when these systems were originally sold?**

Vyper68 – I think replacing capacitors with modern high quality ones is a good idea. These machines were built to a budget to maximise profit. So not all components were the best quality, replacing these with modern quality versions is a given. It helps keep them running for another 40 years.

I think repairs back then were easier in some ways as you could call the Atari or Commodore service centre and buy a POKEY or SID whereas now you can't. On the flip side





there is a lot more information at a persons fingertips with the internet. Modern tools are also better and more readily more available. So it's swings and roundabouts.

**18. DLM – Which programming languages or software tools do you use to interface with legacy hardware, especially for firmware updates or ROM/EPROM programming and integrated-circuit handling?**

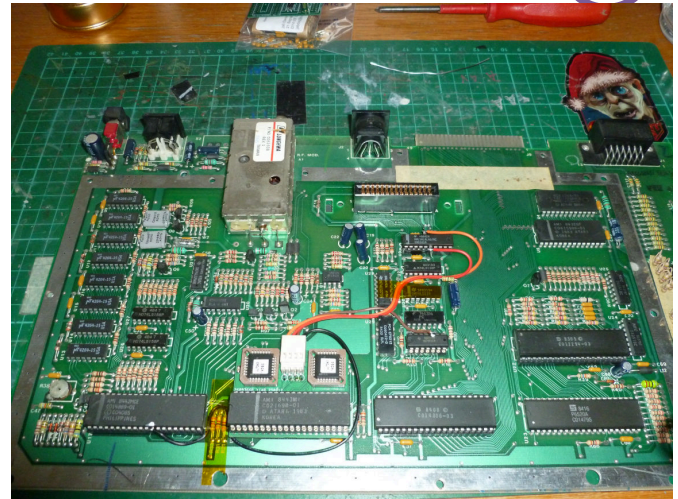
Vyper68 – I don't really use programming languages aside from the normal BASIC and a bit of FORTH as most computers had a BASIC interpreter installed. So you can write a small program to check various things like memory size and system variables. I do dabble in writing 6809 assembler to do the same thing but a lot faster but that is for Dragons and Tand CoCo's only. I have an EPROM programmer for dumping a ROM or burning a new replacement is the old one has failed or there is an updated ROM available and the customer wants one installed.

**19. DLM – How do you document your work? Do you take notes, draw schematics, write guides or share code in public repositories or multimedia content? Are you somehow jealous of your techniques, or are you willing to share your knowledge and experience with others?**

Vyper68 – I take photos and jot down what I am doing and the results so I have a reference for when I have a similar issue with a machine in the future. I will post my results on forums with pictures and write articles to go with them. I don't really see myself as anyone special just someone who had a interest in computers and hardware so I'm not precious about my processes as I'm sure a lot of people do the same thing. So I quite willingly share what I know. The more the merrier for me.

**20. DLM – How much do you genuinely enjoy repairing systems, diagnosing faults, and how satisfying is it when you finally solve an issue that initially seemed insurmountable? And have you ever had to give up because a system had too many faults or the cost simply wasn't worth the effort?**

Vyper68 – I really do enjoy doing this now I'm retired and have more time to spend on it. I don't do it as a business, I just like the process. To be able to repair a device is something I get a great deal of satisfaction from and to start out with a totally dead system and end with a working one is very satisfying for me. I only have one that I had real problems with. There was an Oric-1 I managed to get working but it would not load cassettes and no matter



**Fig. 4 - Motherboard Atari with 512KB expansion**

what I did it would not load a tape and it got to the point where it was not financially worth spending more money on it so it became a Erebus or disc only system. Given that Oric tape loading was so unreliable it was no great loss.

### Conclusions

We thank Richard for sharing his point of view and for telling us something about his adventures in retrocomputer repair. In the world of electronic technicians, it is not always easy to find someone willing to share stories, time and expertise — all essential elements for showing the "behind the scenes" of repairs, the everyday challenges and, above all, the value of this craft. It is precisely the passion for our retro computers that drives hobbyists and enthusiasts like Richard to carry on the mission of preserving and bringing back to life those vintage systems that, over the years, have given us so much enjoyment and knowledge. If you too have computers or peripherals from the past at home, drop by the forums and social media channels frequented by Vyper68. You will find tips, documentation, repair stories and an immense wealth of shared experience. But above all, you will become part of a welcoming community where you can exchange messages, deepen your knowledge and engage with Vyper68 himself and many other retrocomputing and electronics enthusiasts.

### Forums & Links

[SpectrumComputing.co.uk](http://SpectrumComputing.co.uk), [AtariAge.com](http://AtariAge.com), [Atari-Owner.com/club](http://Atari-Owner.com/club), [Forum.DefenceForce.org](http://Forum.DefenceForce.org), [Archive.WorldofTheDragon.com](http://Archive.WorldofTheDragon.com), [StarDot.org.uk](http://StarDot.org.uk), [ColorComputerArchive.com](http://ColorComputerArchive.com), [Lemon64](http://Lemon64), [CPCWiki.eu/Forum](http://CPCWiki.eu/Forum)

**FB Groups:** [OricOwners](#), [SpectrumForEveryone](#)

