

# HVAC&R Nation

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# Fridgies around the world

*Hundreds of nations,  
one occupation*

# FRIDGIES AROUND THE WORLD

Ever imagined plying your trade in another country's HVAC&R industry? We reached out to our friends around the world to find out what it's like.



## How does your wage compare to other professions in your country?

I am employed by the Central Bank of UAE – a federal government organisation of the United Arab Emirates. An attractive salary package is offered by Central Bank, along with other benefits like insurance and a return air ticket from Abu Dhabi to Islamabad each year.

The salary package is comparatively better than from other companies in Dubai and Abu Dhabi. ■

among other things, did work on air conditioning systems. Circumstances brought me to my current area.

## Biggest changes you've seen in the industry

Adapting to European laws on new refrigerants to reduce global warming. We are also seeing increased controls and automation in systems. On top of that, there are energy-efficiency considerations for equipment. ■

## ABU DHABI, UAE

**Name:** Muhammad Wajahat Mirza

**Position:** Air Conditioning Technician

**Company:** Central Bank of UAE

**Time in industry:** 19 years



## MADRID, SPAIN

**Name:** Jesus Torres Camacho

**Position:** Technical Engineer

**Company:** MIPSAs (Manchega de Instalaciones y Proyectos, S.A.)

**Time in industry:** 40 years



## NEW ZEALAND

**Name:** Quantin Els

**Position:** Engineer

**Company:** EcoChill

**Time in industry:** Over 10 years



### Typical day

My day starts at 4am, and I reach the workplace at around 5am where for two hours I study HVAC&R assigned topics until 7am.

Then I start the rounding and checking of the central HVAC system including chillers, AHUs, FCUs, packaged machines and chilled water pumps. I make sure everything is working perfectly. In case of any faults I make notes, inform the engineer and the supervisor and make plans for repairs with an estimated time schedule.

### How did you get into the industry?

My father was an RAC mechanic. I worked with him rebuilding refrigerators, installing new compressors and troubleshooting electrical and control circuits.

### Hardest part of the job

Training and development. I pay from my own pocket for courses and certifications to keep up-to-date with current industry standards and practices. I'm an active member of ASHRAE and RSES HVACR Training Authority.



### Typical day

I spend around 40 per cent of my time travelling for business development and project management. When I'm in the office I allocate 30 per cent of my time to designing systems and the other 30 per cent to managing the company.

### How did you get into the industry?

I originally did an engineering degree and started my career working for an engineering company that,



### Typical day

When in the service part of the business, an average day goes from 8am to 4.30pm and can be anywhere in the Auckland region. This work is varied and may be planned preventative maintenance or emergency response.

Contracts are usually longer hours (6am to 6pm) and can be anywhere in the country, usually for a couple of months. It is more planned work, so you know what



you are doing in advance, depending on the stage of the project. At the moment I'm installing bracketing and pipework.

**How did you get into the industry?**

I originally did an electronics technician qualification and was working in a casino fixing pokie machines. I saw the HVAC technicians coming in to fix the air conditioning and was really interested in what they were doing, and how you make things cold out of nothing. The fact that compressing a gas makes things cold is really interesting.

**What training is required to enter the HVAC&R industry?**

I did an apprenticeship that included four years of doing on-the-job experience and a technical course. At the end you do a trade certification and your electrical certification to practice. You need Site Safe for some sites, but at EcoChill we do our Site Safe as part of our required training, along with Elevated Work Platform certification.

**Best things about your job**

The constant variety. You can also travel around the place to fix problems. And you can work anywhere in the world as a refrigeration engineer. I've worked in South Africa and New Zealand. In New Zealand it's much more organised and the systems we are working with are really new and interesting. ■



**INDIANA, USA**

**Name:** Mark Harvey  
**Position:** Lead Service Technician  
**Company:** LCS Heating and Cooling  
**Time in industry:** 12 years



**Typical day**

I typically start with an 8am service call. This is generally to diagnose a no cool or no heat issue. After this I dispatch myself to the next call. My last call of the day is generally scheduled for an arrival from 3pm to 5pm. If I'm running ahead of schedule, the office may add an extra call to my day.

Drive time between calls is generally 30 minutes or less, and I primarily run service and maintenance calls – although I occasionally run a sales call.

**What training is required to enter the HVAC&R industry in the US?**

Technically, training is not required. However, a two-year trade school is recommended as well as knowledge of electricity and plumbing. Ongoing technical classes are also recommended throughout your career.

**Are any special licences required?**

Yes, a refrigeration licence. There are also county, city and state licences that can apply. In Indiana, I can work under the company licence.

**How does your wage compare to other professions in your country?**

Entry level is nearly double the minimum wage. There is a lot of potential to earn in this industry – not just hourly wages but also with commission and bonus structures. That said, wages can really vary all over the US. Also, many companies pay using performance pay rather than hourly wages. ■



**PAPUA NEW GUINEA**

**Name:** Nigel Sarufa  
**Position:** Site Chiller Supervisor  
**Company:** South Pacific Air Conditioning (SPAC)  
**Time in Industry:** 21 years



**Typical day**

We service and maintain all types of air conditioning, from domestic to large commercial applications. I have four three-man teams, including my own, that look after all our contracted commercial office buildings and shopping centres throughout Port Moresby and Lae.

On a normal day, our operating times are 8am to 4.30pm. However, due to the nature of my role I generally arrive at the office by 7am and finish work around 5pm. I have a company vehicle 24/7 to attend emergencies should they occur.

**How did you get into the industry?**

I was employed as a trade assistant by the Kenmore group of companies and also completed my apprenticeship with them. Since then, I had the opportunity to spend three years in the oil and gas industry. I eventually left due to the extended time away from my young family and the fact that I was not exposed to new technologies. I moved from there and joined SPAC where I have been now for eight years and am loving it.

**What training did you require to enter the HVAC&R industry?**

Apart from starting as a trade assistant and completing Year 10 at school, to become a tradesman I had to complete a four-year apprenticeship. This is modelled on the Australian system.

**Are any special licences required?**

One thing I'm happy about is that the Papua New Guinea Refrigeration Air Conditioning Association (PNGRACA) has recently been established, and will hopefully be mandated to become a licensing authority for refrigeration tradesmen and refrigerant handling next year.

**Hardest part of the job**

Everything is imported here. We cannot simply run down the corner to a Reece, Actrol or Heatcraft dealer to pick up a part that may have been overlooked. My main priority is customer satisfaction – this is my pride and joy. ■



**MARYLAND, USA**

**Name:** Ali Unitas  
**Position:** Service Technician  
**Company:** Walton & Company  
**Time in Industry:** 10 years



**Typical day**

I currently hold a Journeyman's licence, and am also the only woman field technician in my company. Generally, my work day is 7am to 3.30pm, Monday through Friday. Some days I may start earlier or work

later depending on planned work load or seasonal surges. I'm on call for two weeks of the year.

Typical Journeyman work includes performing a variety of standard to moderately complex technical tasks related to installing, maintaining and repairing heating, cooling, ventilation and related systems. To qualify for the Journeyman's licence you must hold an apprentice licence for at least three years, and complete at least 1,875 hours of training in providing HVAC&R services under the direction and control of a licensed HVAC&R contractor, along with passing the rigorous Journeyman's examination.

**How did you get into the industry?**

My father worked for the local utility company for 35 years and progressed through the ranks to become a key electrical outage planner. I also enjoyed helping my father fix things around the house and learning how things worked. In my sophomore year of high school, I was introduced to the HVAC&R program. I was told that you can make a good living, it will always be in demand and I wanted to be self-sufficient. It is multiple trades in one and it also saves money knowing how to do it myself.

**Hardest part of the job**

In school, there were a few concepts that were very difficult for me to grasp, especially the physics behind refrigeration. Once I got into the field and started applying that knowledge, it helped paint a much clearer picture of how everything worked together. I also discovered that making mistakes and repetition are very important learning tools. So is building relationships with your co-workers to find that person to help guide you along the "learning by doing" journey. Teaching yourself and getting extra training on your own time is key as well.

As the only woman in the field, I have had numerous customers make assumptions about my abilities based only on my gender. However, they are set straight once they see my work and we develop a good customer-technician base.

**Biggest changes you've seen in the industry**

I follow some skilled tradeswomen from all around the world on social media and it seems like a lot of women in other countries are thriving off of the trades.

I would like to see that happen more here in the United States. The HVAC&R field could also stand a little more diversity. ■



**PHILIPPINES**

**Name:** Manuel Azucena  
**Position:** Installer, Service Provider, Supplier and Trainer  
**Company:** Self-employed  
**Time in Industry:** 30 years



**Typical day**

I usually start at 8am and finish at 8pm. Depending on requirements, I have to prepare training manuals and instructions if I am conducting training. I also purchase equipment, talk to customers, prepare documents and install units.

**GLOBAL SMOKO SNACKS**

Here in Australia, a smoko snack might consist of a meat pie or sausage roll with a Coke or chocolate milk. Here's what your colleagues in other countries prefer . . .

- Abu Dhabi**
  - Mutton curry, chana dal, mixed vegetables, grilled chicken and fruits such as oranges, mangoes, bananas, blueberries, figs and almonds.
- Spain**
  - Healthy Mediterranean food.
- New Zealand**
  - Biltong – a dried, cured meat.
- Indiana, USA**
  - Peanut butter-filled pretzel bites, beef jerky and M&Ms.
- Papua New Guinea**
  - Roasted peanuts, rice and chicken stew.
- Maryland, USA**
  - Trail mix, fruit and vegetables.
- Philippines**
  - Rice meal, bread, sliced fruit and coffee.
- UK**
  - A BEST (bacon, egg, sausage and tomato sandwich).

**How did you get into the industry?**

I took up a Bachelor of Science in Industrial Education, with a major in refrigeration and air conditioning and passed the licensure exam. I was an RAC teacher in a government tech-voc school and became a trainer for RAC trainers for 19 years. I then joined the overseas workers as assistant program officer in the United Nations Environment Programme (UNEP) in Bangkok.

After my two-year stint with UNEP, I worked as an RAC trainer in the Middle East and now work as a freelance RAC technician and dealer.

**Are any special licences required?**

To teach as a trainer (RAC or any trade), you have to pass a licensure examination for teachers, given by the government. If you work as a mechanical engineer, you have to pass a board examination for engineers, also given by the government. For technicians, you have to take an assessment and be certified by TESDA, the Technical Education and Skills Development Authority. This assessment and certification procedure can be applied to graduates of formal schools, non-formal schools or for those who did not finish a certain course but learned the trade by experience.

**How does your wage compare to other professions in your country?**

The salary is standard, as set by the government. Sadly, some companies do not follow the government standard. But an RAC technician can earn extra income during a day off, as our country is tropical and air conditioning and refrigeration is a necessity.

A freelance technician can earn more as compared with other professions (office workers, call centre agents, ordinary government workers) as long as you are a hard worker. ■

**GLOBAL PAY SCALE**

Based on the information supplied by those interviewed in this article, here's how HVAC&R technicians' wages around the world compare to other trades.

	Compared to other trades		
	Below average	Average	Above average
Abu Dhabi			✓
New Zealand			✓
Indiana, USA			✓
Papua New Guinea		✓	
Philippines		✓	
United Kingdom	✓		





## UNITED KINGDOM

**Name:** Ian Fisher

**Position:** Business Development Manager

**Company:** Airmaster Air Conditioning Ltd

**Time in Industry:** 30 years

### Typical day

The day starts for me at around 8am and I usually finish between 6 to 7pm. Working for a relatively small company that is constantly busy means my official job role usually goes out of the window and mostly I can be found quoting for repairs and new air conditioning units to offices and server rooms – as well as getting out there on the tools or helping with technical queries.

### What does being a TM44 Assessor mean?

In the UK, buildings with more than 12kW of cooling by law need to have a report called "Air Conditioning Energy Assessment". I am Airmaster's only TM44 Energy Assessor, and make sure our customers are compliant with this.

### How did you get into the industry?

I actually started in the industry before leaving school at the age of 15, where I worked mostly in the steelworks helping to keep clean the air conditioners in crane cab coolers and steelworkers' rest rooms. I was paid in cash until officially leaving school in July 1988, and have been in constant employment in the industry since.

### Is there any special licensing system you need to comply with in the UK?

In order to work with refrigerants as an engineer, you need as a minimum to be trained to a qualification called F-Gas Category 1, and the company you work for must be F-Gas certified. The most popular certification scheme is REFCOM. If you can prove really good practice for handling refrigerants you acquire an elevated status called REFCOM ELITE. We are currently in our second year of elite status.

### Biggest changes you've seen in the industry

The ones that spring to mind are refrigerant changes – R22 to R407c to R410a and now R32. Also, people's attitude to air conditioning has changed. Many people buy them now for energy-efficient heating, with the cooling being a bonus, which of course was the other way around years ago. ■

#### HVAC&R Nation thanks the following organisations for their help with this story:

- Air Conditioning Contractors of America (ACCA) – USA
- Institute of Refrigeration – UK
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) – USA and UAE
- Asociación Técnica Española de Climatización y Refrigeración (Atecyr) – Spain
- EcoChill – New Zealand
- Philippine Society of Ventilating Air Conditioning and Refrigerating Engineers (PSVARE) and Refrigeration and Airconditioning Technicians for Development of the Philippines – Philippines
- PNG Refrigeration Air Conditioning Association – Papua New Guinea