

THE OFFICIAL JOURNAL OF AIRAH

APRIL 2017 · VOLUME 16.3

RRP \$14.95

# Ecolibrium

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# Q&A: Ian Tuena, M.AIRAH

Ecolibrium breaks bread with refrigeration identity Ian Tuena, who has run his own business, CA Group Services, since the late 70s.

**Ecolibrium:** Please tell us a bit about your background.

**Ian Tuena:** I grew up on a dairy farm in Murchison and started in the industry in 1972 with McNiece Bros in Shepparton, in Victoria's Gippsland district.

I was extremely fortunate to work with some great tradesmen, who were hard and tough, but always fair. I am ever so thankful for their input into my learning.

McNiece Bros were a great company to work for, and I was fortunate to work on a range of equipment, including industrial systems and multi-story AC systems.

I have run my own business since 1978, working across a broad range of services and projects, including mechanical services, industrial and commercial refrigeration systems. We represent Advansor, the world-leading Danish transcritical CO<sub>2</sub> manufacturer.

I am fortunate to have a fantastic young team working for me, and our design team headed by Jonathan Hare is currently developing our energy-efficient environmentally friendly hydrocarbon chiller range.

**Eco:** What are you passionate about?

**IT:** As owner of CA Group Services, I am passionate about the refrigeration industry. I have been a director of this business for 39 years, implementing best-practice principles, code of ethics adherence, and governance protocols.

With over 46 years in the industry, I have experienced the transition from traditional refrigeration principles to ground-breaking, leading-edge technology. Moral commitment has driven my involvement in low-GWP natural refrigerants.

I proudly have a commitment to developing knowledge and expertise in all refrigeration technicians.



Ian Tuena, M.AIRAH

**Eco:** What do you think the three big problems are in industry?

**IT:** Apathy. Lack of training. Lack of recognition as an industry.

**Eco:** What are your concerns about A2L refrigerants?

**IT:** I am very concerned about HFOs in particular. They were first developed back in the 1930s, and they were not the chosen refrigerant way back then, so why are they the preferred choice now?

I am concerned that HFOs A2L are being treated as just another replacement for HCFCs, and they are clearly not. They sit in the same flammability class

as NH<sub>3</sub>. I was taught from day one of my apprenticeship to always treat NH<sub>3</sub> with respect. The minute you don't, it will bite you. I have grave concerns this is not the message being given to HFOs.

On December 12, 1983, the right conditions were met in an ice-cream factory in Houston, Texas, with devastating consequences. Imagine a chiller in a basement with an A2L HFO installed and these same conditions are met. You will have the same result.

The general impression I am hearing from the industry is A2Ls are safe – there is no risk of going “bang”. This is a grave mistake.



In addition to that the products of combustion are highly toxic, but that is seldom mentioned. What is happening to a tech's lungs if he is smoking while working with this refrigerant? This is what complacency breeds.

Also, what happens in the event of a similar fire to the Docklands' Lacrosse building? What if the front of the apartment building is filled with R32 split ACs? Not only do the emergency services have to deal with the fire, but now they have a highly toxic gas going who knows where.

Finally, there is research being conducted in Germany with strong evidence pointing to the breakdown of HFOs once released, forming water pollutants.

I believe in naturals, and by working with them, it forces us to work to an extremely high standard, which in the end will benefit not only the industry but consumers and the environment.

**Eco: How can we make the industry aware of the risks it faces?**

**IT:** Education and training. And we need it now. We can self-fund this by imposing a "training levy" on all refrigerants, and this would allow us to roll out a re-education program for all in the industry.

**Eco: What are you doing to make the change happen?**

**IT:** I have just attended the IIAR conference in San Antonio, Texas (US). I went there primarily to see what educational materials were available and what models we can follow. I am hoping to present that to the education group headed by Noel Munkman, M.AIRAH from the ARC, which has been working to develop better programs for A2Ls and natural refrigerants.

The ARC are in a strong position to disseminate information to all of the industry, as they have a strong database from which to work. This is in conjunction with all industry bodies working together. I have also taken over the presidency of the ARA.

I am hoping to use this to raise the industry awareness of how much work we have to do and how little time we have to do it in.

Refrigeration safety is a complex area because it's interrelated with dangerous

goods regulations and standards, electrical regulations – all of which are evolving together.

**Eco: How do you think industry can best contribute to making it less complicated to understand?**

**IT:** If we go back to the first lesson I learnt on the first day I started, "Treat this – meaning Ammonia – with respect". But now extend this to all A2L, A2 or A3 refrigerants. I am very concerned the genie is already out of the bottle.

Go to any Harvey Norman or Good Guys store, the only offer you will get is a split containing an A2L. We have to work to the highest common denominator, not the lowest. The National Construction Code will always lag behind the industry and Code compliance is very difficult. There are so many things you have to cross-reference.

It is not a case of remove the R22 out of a particular unit and replace it with an A2L, or worse an A2 or A3. It can be done safely but there are a multitude of codes you have to comply with as well as engineering requirements. This information is sadly lacking, and I know of conversions that have been done that have been completely illegal. The Rochester incident is a classic example.

This was a job that was done by unqualified people to a system that was in no way compliant with any of the regulations required, and the end result was the sad death of two people who believed they were helping the publican keep costs down. I do not want this to happen to another person but I am deeply concerned we have already begun to set ourselves up for a repeat.

The simple message we have to get out is: If you do not know how to comply with all the regulations and have a full understanding of the new AS5149 then don't do it.

Secondly, treat All A2L refrigerants as if they were a hydrocarbon. If you don't then sooner or later they will bite you. ■