



COOLCHANGE

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Summer Campaign adds TV to the mix

ARC's annual Summer Campaign has added TV commercials to its media mix in order to take the 'look for the tick' message to even more consumers through more channels.

Each year ARC runs a five month online advertising campaign through the summer to connect consumers with ARCTick licensed technicians. When people are looking for refrigeration and air conditioning services online, the campaign helps direct them to the www.lookforthetick.com.au website to contact the licensed technicians in their local area.

This year's campaign began at the start of October with the proven mix of Google Search, Google Display, Facebook Lead Ads and Facebook Website Click Ads.

But now it also includes animated TV commercials on YouTube and Connected TV. This adds another dimension to a campaign which last year made 200,000 phones ring with enquiries about air conditioning and refrigeration servicing and installations.

Connected TV (CTV) is when our TV viewing is being streamed over the internet, rather than via a signal coming in directly from the TV aerial. Typically, it uses an internet-connected device such as a smart TV, game console, Fetch or Foxtel box, computer or tablet, or smart phone apps such as 7plus or 9Now.

The important thing about CTV is that the channel we are watching knows quite a lot about us from our various online activities, just like Google or Facebook does.

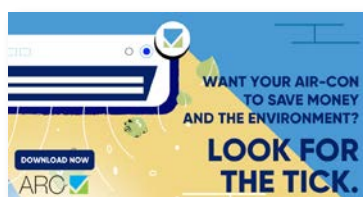
As a result, it can target us with ads based on what it knows about us – and if that includes researching air conditioning, it can target us with 'look for the tick' ads.

The Summer Campaign runs for five months to the end of February, with the Google and Facebook images based on stills from the TV commercials.

See the commercial for home air conditioning here: <https://youtu.be/6W2sax3EHkM>



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R404A restrictions under consideration

The Department of Climate Change, Energy, the Environment and Water is developing options to reduce the high use of R404A in commercial refrigeration.

The Director of the Ozone and Climate Protection Section in the department, Patrick McInerney, said the department was concerned about the high use of R404A because it had not reduced at the rate anticipated despite alternatives being widely available.

“Australia will consider restrictions on new equipment to help to encourage change and support the HFC phase-down,” he said.

“Restrictions might be appropriate where an equipment sector is slow to transition to less harmful refrigerants or there is a persistent supply of new equipment using higher global warming potential [GWP] refrigerants in a sector where alternatives are widely in use.”

Speaking recently at ARBS, Mr McInerney said the uptake of lower GWP automotive refrigerants had been slow but was starting to pick up, and the department was expecting to see the pace of change increase.

“In Australia we have managed our transition across refrigerant types in a partnership between government regulation and industry innovation,” he said.

“Industry has driven significant change to reduce direct and indirect emissions through changes in product design, the use of lower global warming potential gases and energy efficiency improvements.”

Mr McInerney said the Montreal Protocol, which was the genesis of all these initiatives, had been particularly successful.

“As a result of actions under the Montreal Protocol, the ozone layer is predicted to recover in the southern hemisphere by mid-century,” he said.

“Actions taken under the Montreal Protocol avoided 135 billion tonnes of carbon dioxide equivalent emissions from 1990 to 2010, more than that achieved under the Kyoto Protocol first commitment period.

“The global HFC phase down will reduce emissions equivalent to 72 billion tonnes of carbon dioxide by 2050 and avoid up to 0.4°C of global warming by the end of this century.

“The Montreal Protocol is now looking at ways to improve energy efficiency in the refrigeration and air conditioning sectors to further protect the climate.”



“Restrictions might be appropriate where an equipment sector is slow to transition to less harmful refrigerants”

– Patrick McInerney

Food cold chain wake-up call

The importance of the food cold chain came into sharp focus recently when four members of the Australian Food Cold Chain Council (AFCCC) suffered food poisoning on a flight to Europe.

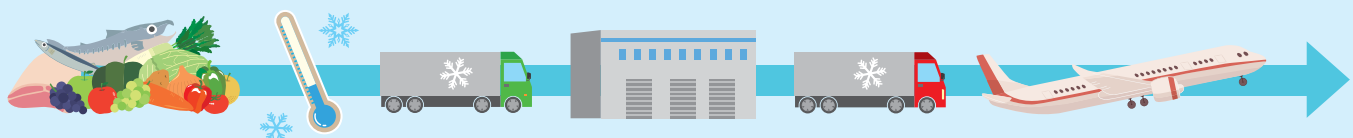
AFCCC chairman Mark Mitchell and three of his fellow members were heading for a world exposition on cold chain transport in Hanover, Germany, when they were struck down with severe food poisoning immediately after stepping off their flight from Australia.

They suspect non-compliant handling of salad, chicken and fish at airline catering points to be the most probable cause of their illness. The incident shows how the travel catering industry can have difficulty transporting uncontaminated fresh produce at constant temperature, highlighting the need for excellent refrigeration and temperature monitoring systems.

Mr Mitchell said a cold chain audit could reveal fundamental failures in food safety processes.

“In some airports, food is loaded in searing heat through several vehicles and distribution points, over long distances, before it ever reaches the refrigerators in the plane,” he said.

“AFCCC can help airlines and airport managements to conduct audits that include a thorough examination of the temperature map of all cold chain journeys.”





Australia stands proud at WorldSkills

Australian air conditioning technician Tom Clancy upheld Australia's reputation for quality refrigeration work at the WorldSkills international competition at the recent Chillventa exhibition in Nuremberg.

Although he did not bring home the gold, he delivered impeccable work under the high-pressure conditions of international competition. His mid-field result among 16 finalists reflected the quality of his work, while the winners earned their medals by working at exceptional speed.

Tom was accompanied by his parents (and employers) Chris and Gaye Clancy from Central West Refrigeration in Perth, and his training manager Carl Balke, who was also Australia's international WorldSkills expert judge at the competition.

Carl said Tom's work was immaculate. "That's Tom all over – he dresses immaculately, his van is immaculate, and his work is immaculate," he said. "In competition like this, speed counts, but in the real world it's the quality that counts, and that's where Tom is definitely a winner."

Carl added that Tom's success could not have happened without the support of Kirby HVACR, Refrigerant Reclaim Australia, RACCA, ARC, TAFE Qld, TAFE WA and the many other supporters of his 3-year WorldSkills journey.

The competition began with a coil fabrication challenge before the main challenge of building those coils into a refrigeration system. The design was created by WorldSkills International's RAC Skills Competition Manager, Noel Munkman – ARC's own Technical and Training Manager – although this was no advantage to Tom since the design was a tightly held secret.

A special benefit for the WorldSkills finalists was the opportunity to see the latest technology at Chillventa, the World's largest HVAC&R exhibition, as Noel provided time in their schedule specifically for this purpose.



Tom Clancy and his training manager Carl Balke (third and fourth from left).

More information from worldskills.org.au

National Construction Code postponed

The Australian Building Codes Board (ABCB) has postponed implementation of the National Construction Code (NCC), which was to have come into effect on 1 September.

A meeting of Building Ministers in August decided that it will commence on 1 May 2023, with a transition period to 1 October 2023. The Building Ministers agreed to include upgraded residential energy efficiency provisions in NCC 2022 to strengthen minimum requirements for the energy efficiency of new homes and support the economy's transition to net zero emissions by 2050.

The minimum standard for the thermal performance of new homes will increase from the Nationwide House Energy Rating Scheme (NatHERS) equivalent of 6 Stars to 7 Stars. Homes built to this standard will be cheaper to run, more comfortable to live in and more resilient to extreme weather. The Code will also require Whole of Home management of the energy use of fixed appliances such as heating, cooling, hot water and lighting, even swimming pool and spa pumps. This allows flexibility in choice of appliances, including fuel type and energy efficiency rating, and onsite renewable energy (such as solar panels), combined to meet an annual energy usage benchmark.

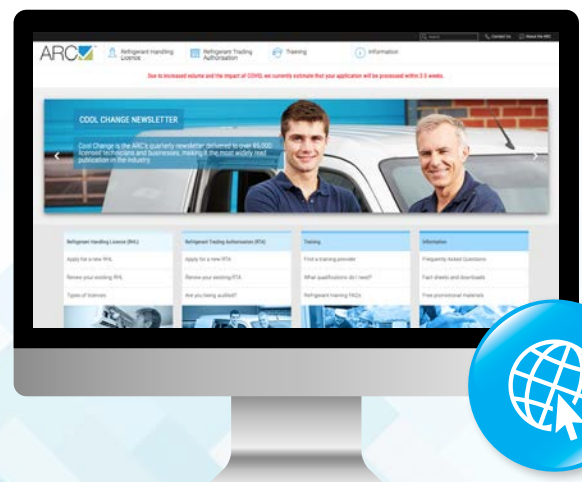
There will also be new accessibility standards for homes and apartments, including step-free street or parking entry to a building, step-free entry to a dwelling, accessible doorways, a toilet on the entry level, step-free showers and reinforced bathroom walls to suit grab rails.

More information at <https://www.abcb.gov.au/>

Have your say about ARC websites

Every year ARC reviews its websites to ensure they deliver the most useful information for ARCTick licence holders.

ARC's main website www.arctick.org and licensing scheme website www.lookforhetick.com.au are loaded with important information, but there is always room for improvement. If you have suggestions about how we could improve the websites, whether in content or in functionality, this link will take you to a brief survey where you can have your say: https://www.surveymonkey.com/r/ARC_Websites





Pair Coil Installation

There have been some reports in recent times regarding failure attributed to pair coil installations. The probable cause of this failure would appear to be from a relatively unique blend of characteristics of chemicals being used in production, environmental factors combined with installation practices which encourage micro-pitting.

Micro-pitting (also known as Ant Nesting) requires the simultaneous presence of moisture, oxygen and a corrodent, usually an organic acid, such as formic, acetic, propionic or butyric acid or other volatile organic substances like methanol, ethanol, formaldehyde or acetaldehyde. The copper surface adjacent to this pitting is typically discolored from purple/red-brown to dark grey.

Sources of corrodent include synthetic lubricating oils used for forming and joining copper tubes, degreasers and detergent cleaners, inhibited antifreeze solutions, brazing or soldering fluxes, volatile substances from building materials (for example, in timbers used in roof spaces subject to seasonal high humidity), foods and food processing (such as vinegar, vegetable oil dressings and liquid smoke), certain adhesives, some insulation barriers and leak detector bubbles or foams.

Stagnant shielded conditions such as at crevices in assembled coils favour the onset of corrosion. This also includes U-bends in the pipework where any moisture between the insulation and copper tube could collect and pool.

Maintaining clean and dry surfaces is likely to help reduce Ant Nesting. Generally, this corrosion requires the presence of a low-molecular-weight organic compound in combination with air and moisture. So, removing any of these should limit the problem. The practice of sealing the ends of pair coil is likely to help prevent micro pitting.

Some practical steps in limiting the potential for micro-pitting in pair coil include:

1. Understand the environment in which the unit and pair coil are to be installed. This should influence the choice of pair coil to be used. Environmental considerations are referred to in *AS/NZS 5141:2018 Residential heating and cooling systems — Minimum applications and requirements for energy efficiency, performance and comfort criteria*.
2. Ensure there are no u-bends or low-lying pipework where moisture can collect and pool.
3. Remove all flux, carbon and other contaminants from silver brazed joints.
4. Remove all oil from around flare connections, compression joints and copper tube.
5. Ensure no moisture enters or remains on the copper tube or insulation, including water and leak detection fluid.
6. Seal both ends and any joints/breaks in the insulation, especially around the flare connections to the indoor unit.

Study shows maintenance can deliver big energy gains

A joint study by the Australian Government and industry has revealed that eliminating common faults in RAC equipment can overcome energy losses of up to 20% through preventative maintenance.



Led by the **Department of Climate Change, Energy, the Environment and Water, Refrigerants Australia** and the **Airconditioning and Refrigeration Equipment Manufacturers' Association of Australia**, the study measured efficiency losses and energy consumption for RAC equipment when specific faults were introduced to selected equipment.

The study's findings offer valuable information for licensed technicians in showing clients the commercial benefits of regular maintenance in keeping their equipment operating at full efficiency and potentially prolonging its operating life.

All equipment tested had efficiency losses or increased energy consumption for most fault test conditions, all of which could be reduced by routine maintenance.

The study involved a series of bench tests on four pieces of household and light commercial RAC equipment to measure the impact of common faults. The tests were conducted by HVAC&R specialist testing companies, **SuperCool Asia Pty Ltd** and the **CSIRO**.

SuperCool tested a refrigeration display cabinet and a remote walk-in cool room. CSIRO tested a single non-ducted split system with inverter and a non-inverter, 3-phase rooftop package air conditioner.

Four common faults were introduced to each piece of equipment after a baseline record was taken. The faults were a blocked condenser; a blocked evaporator; refrigerant undercharge and overcharge; and contaminated refrigerant.

Test results showed, on average, 14% to 20% energy losses across most tests. When several faults co-existed, it increased energy use substantially, with the likelihood of system failure when faults were not addressed.

Key to this initiative was quantifying the benefits of HVAC&R maintenance in collaboration with industry and business. In February 2021 the Department released a comprehensive research report on **Leaks, emissions and maintenance: refrigeration and air conditioning equipment by the Expert Group**, a climate and energy consultancy. The report identified the most common and preventable faults in refrigeration and air conditioning equipment globally. They were incorrect refrigerant charge (over or under due to refrigerant leakage); dirty condensers and mechanical issues; and dirty evaporators and mechanical issues.

As a follow up to this work, Refrigerants Australia and the Expert Group worked with **Grosvenor Engineering Group** to analyse an anonymised set of Grosvenor's maintenance data and in December 2021 published **Air Conditioning Faults – An Australian Analysis**. This confirmed the frequently occurring faults that result in energy penalties to equipment owners; it also indicated faults that do not cause energy penalties but do cause costs to repair and interruptions to service.

The bench test findings are available on the Department's **Ozone publications and resources page**.

Noel Munkman award

ARC's own technical and training manager, Noel Munkman, has been inducted into the ARBS 2022 Hall of Fame for his lifelong contributions to the industry.

Starting as a RAC apprentice 50 years ago, Noel has spent his career shaping training in the refrigeration and air conditioning sector. He has held senior roles with TAFE NSW, Electrotechnology Industry Reference Committee and most recently at ARC.

Since 1989 he has been involved in WorldSkills competitions at regional, national and international levels and is currently WorldSkills International's RAC Skills Competition Manager.

As ARC's Technical and Training Manager, Noel applies his vast technical knowledge to helping technicians and businesses improve their day-to-day operations. He also participates in national industry and technical committees and working groups.

Noel has helped to develop national Training Package RAC qualifications and competency units, and participated in the Oxford University Round Table on Sustainability. He managed the development of natural refrigerant learning and assessment resources for hydrocarbon, CO₂ and ammonia, and developed learner resource manual and assessment materials for A2/A2L class refrigerants.

In accepting his award, Noel said he had enjoyed a long and rewarding career in a fantastic industry. He considered his most important contributions to be helping to ensure the RAC trade course met the ever changing needs of our industry, and working with WorldSkills Australia to raise the profile and recognition of the industry.



Michael Bennett receives VASA Legend award

ARC's own board chair and former Refrigerant Reclaim Australia general manager, Michael Bennett, has been presented with the prestigious VASA Legend Award.

Having begun his career at BOC in the 1980s, Michael was instrumental in establishing Refrigerant Reclaim Australia in the 1990s as Australia's first refrigerant recovery, reclamation and destruction scheme. He began managing the program on a consulting basis in 1997 and became general manager in 2000 as the program expanded and the destruction of recovered refrigerant increased.

With Michael at the helm, RRA received several prestigious awards including the United Nations Environment Program (UNEP) Montreal Protocol Implementation Award, and two awards from the US Environmental Protection Agency. Michael personally shared in the Nobel Peace Prize in 2007 as a lead author for the Intergovernmental Panel on Climate Change (IPCC) and Technical and Economic Advisory Panel (TEAP) special report, **Safeguarding the Ozone Layer and the Global Climate System**.

In 2018 he was appointed chair of the ARC industry board, where his knowledge and experience are greatly valued.

VASA president Ian Stangroome said Michael had given the industry a strong voice for all matters relating to the handling of refrigerants. "Mike is a friend and an ally to the industry," he said.

"He is one of those people who you'll be glad to have on your team. He has certainly been on our team since the beginning."



**DID YOU KNOW RRA
WILL PAY YOU FOR YOUR
USED AND UNWANTED
REFRIGERANT?**



To recover refrigerant:

- 1 Collect a recovery cylinder from your refrigerant gas supplier,
- 2 Fill it with used, contaminated and unwanted refrigerant from systems you service, repair, or decommission.
- 3 Return it to your refrigerant supplier and collect your rebate



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