

# HOT Air



Newsletter of the Vehicle Air-conditioning Specialists of Australia  
April Edition – 1997



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VASA President  
Mark Mitchell



## The Ultimate World of the Mono-Refrigerant

Here's VASA's message to the alternate refrigerant gas market – *"It's not a perfect world"*.

VASA president Mark Mitchell said the manufacturers of alternate gases entered the market on the assumption that it is a perfect world – meaning that everyone would label the system correctly; that everyone would communicate with their customers; that the right fittings would be used; that the system would be evacuated properly; that the drier would be changed every time; that dedicated recovery and recycling systems would be employed; and that the customer would be well informed on the use of these gasses.

"What a lot of bull," proclaims Mark. "We don't have a perfect world.

"The chance of all of these things happening is ZILCH.

"VASA's ongoing concerns about the multiple gas market will be aired at the annual convention along with our continuing efforts to achieve a mono-refrigerant world.

"It took 20 years to get the industry to evacuate properly and check oil levels and compressors and even leak test correctly," said Mark.

"With multiple refrigerants, can you imagine the implications. It will undoubtedly lead to contamination of equipment, cocktails of oils and contamination of cylinders.

"VASA is doing its best to push for a mono-refrigerant world.

"Wouldn't life be easy if we could all just switch from R12 to R134a.

"It appears that the majority of VASA members have a mono refrigerant mentality.

"Nothing would make me happier than to go to the market and promote this simple, one refrigerant policy," said Mark.



*Continued page 2*

### VASA joins with MACS & IMACA

This issue of Hot Air carries the official emblems of MACS Worldwide (Mobile Air Conditioning Society) and IMACA (International Mobile Air Conditioning Association) – two of the most powerful and influential mobile air conditioning organisations in the world.

Although both are stationed in the USA, they work in tandem and collectively

provide the air conditioning industry with strategic representation as well as a great deal of technical data.

VASA has actively pursued a liaison with both organisations, recognising that there are no global boundaries on issues such as the refrigerant gas debate, government policies and industry professionalism.

*Continued back page*

# Convention 1997 HOT! HOT! HOT!

**The theme for the 1997 Convention is Hot Hot Hot! 97. The issues will be Hot, the debates will be Hot, the trade displays will be Hot and the entertainment will be SSSSizzling.**

Hot Hot Hot! 97 will be held from Thursday, July 24 to Sunday, July 27 1997 at the Royal Pines Resort on the Gold Coast.

Features of this year's program will include:-

***More fun for the ladies  
Activities for children  
A welcome cocktail party***

Chairman of the Convention Committee, Steve Whitelock has also sent out a call for sponsors, to help defray costs and keep the convention in the "affordable" bracket for all members of VASA and their guests.

Steve has promised plenty of opportunities for sponsor recognition as the VASA convention is rapidly gaining status as an event not to be missed on the Australian automotive air conditioning calendar.

Now that he and his helpers are well into the organisational detail of Hot Hot Hot!, Steve is first to acknow-



*Steve Whitelock*

ledge that last year's convention in Sydney, headed by director Tony Heat, was a benchmark which would be hard to follow.

"We will not even attempt to copy last convention, but the venue this year in itself will conjure up its own brand of excitement.....after all, you will be in the play capital of Queensland - sun, surf, sea air etc," said Steve.

This year will see the usual events, but more activities will be incorporated for the ladies. The evening functions will be equally focused at men and women and kids will be taken care of at the Royal Pines "Pineys Kids Club".

The program will run for two full days and a tour of Cooltemp in Brisbane has been arranged. Seats are limited for this so you will need to register early.

A questionnaire sent to members has generated a tremendous response, with 34 of the 36 display booths booked at the time of going to press. This is well ahead of any other year at the same time.

This year's gala night will be dazzling, with entertainment booked and music and dancing the order of the night.

At the time of going to press, registration packs are either in member's hands or well on the way and enclosed will be literature on Gold Coast attractions, an interim program and a registration form.

## **Register quickly**

Please note that your completed forms and payment must be received by Acacia Travel no later than **Friday 18th April 1997**. This is short notice but is a requirement of the hotel.

Please give the organisers every assistance to ensure deadlines are met.

A sponsor list including prices will be also be sent out shortly. Convention events must be sponsored to lower the overall cost of the convention and keep it affordable. VASA will not forget your generosity and acknowledgments will be made and appropriate signage erected.

"The convention can be all hard work or just plain fun or a little of both. It's up to you. If you are golf addict, Royal Pines is for you. It boasts two championship courses so bring your clubs and unwind. Bring the kids and enjoy all the Gold Coast has to offer, with theme parks, endless beaches, shops, scenic tours...the possibilities are endless," enthuses Steve.

*Continued from page 1*

"However, it's a hard solution to sell to the motorist.

"I liken it to the brake pad situation of a few years back. The motoring public knew that asbestos would eventually be replaced, but generally, no-one really knew exactly when, or who, or how.

"It's the same for this transitional period on our air conditioning gasses. I'm beginning to feel the motoring public will never really know when or how.

"In the meantime, VASA continues to keep rolling down the razor blade of life as far as refrigerant gasses are concerned. But some wins are being made. I refer to the story in this issue from South Australia about new gas legislation," added Mark.

# **SOUTH AUSTRALIA TO BAN FLAMMABLE GAS FOR CARS**

**Good news from South Australia— and we quote — “The Department is preparing regulations to ban the use of flammable air conditioning gas in motor vehicles.”**

An official release from the Hon Dean Brown MP, Minister for Industrial Affairs in the South Australian government says the State had already commenced the process (Release dated 2 March 1997) to prepare regulations to ban the use of this gas.

“As soon as this matter was drawn to my attention and the risk to the public highlighted to me about a month ago I instructed action to be taken to ban the use of the gas,” the Minister said.

“My concern has been that if the car was involved in an accident, then the risk of fire could be increased with the use of this air conditioning gas.

“We will be adopting regulations similar to those which apply in Queensland and New South Wales.

“The Department of Industrial Affairs has already had discussions with a number of groups and I expect the regulations to be passed within the next two months.”

VASA congratulates the Minister for having taken the initiative and acted decisively on this issue.

We look forward to publishing the details of the legislation in the next issue of *Hot Air*.

## **VASA encourages big changes in insurance attitudes**

**When VASA invited the big guns of the Australian insurance industry to the conference table in Sydney last year, it was the beginning of a chain of events which is now seeing significant changes in attitude towards the automotive air conditioning industry.**

President Mark Mitchell reports a warming of attitudes among the majors, like NRMA, RACQ-GIO, AAMI and FAI to use VASA members for repair work to damaged vehicles.

The standards applied to insurance repairs are constantly debated at VASA gatherings. In Queensland recently, stories about assessor ignorance of proper replacement and repair methods for air conditioning systems were flowing thick and fast. VASA sympathises with the assessors and has embarked on a concerted scheme to improve the knowledge of assessors on refrigerant gasses and other air conditioning components.

While VASA executives chip away at the management level of the insurance companies, members could help by educating assessors and repairers.

Even VASA's training program has begun to infiltrate the insurance companies, so there is a groundswell of new understanding out there in repair-land.

President Mark Mitchell reports that VASA is also pushing the mono-refrigerant theme with insurers and “like us, they are adopting the right options.”

On the question of retrofitting charges, it appears that Australia wide, those air conditioning specialists doing insurance work are able to retrofit a car for around \$150 plus parts. This cost level has been welcomed by the insurance industry.

“They seem to be in favour of adopting the chosen international standard of R134a and also seem to be happy with the costs to date,” said Mark.

VASA members are encouraged to make contact with their state directors for up to date information on the relationship with the insurance industry in each area.

# Retrofit – USA Style

The retrofit component of the auto air conditioning industry has been placed under the microscope in the USA, with publication of a comprehensive survey, conducted by IMACA.

In the US, widespread shortages of CFC-12 have been predicted by summer of 1998. The important role retrofit could play in meeting the future service needs of the remaining CFC-12 fleet was apparent to IMACA. In order to plan for the future, the industry needed data on current retrofit activity, hence the 1996 IMACA Retrofit Survey.

It is expected that the detail of the survey will be the subject of IMACA executive director Frank Allison's paper to the VASA convention in July on the Gold Coast.

Among the significant findings, published in the IMACA newsletter Shop Talk, in its first 1997 issue, were:-

- 28% of the respondents performed retrofits during 1996
- In 86% of the businesses, air conditioning service accounted for 25% or less of the total service volume
- 89% of the businesses serviced less than 500 air conditioning systems in 1996
- 80% of the businesses performing retrofits serviced less than 500 air conditioning systems in 1996
- Only 4% of the businesses reported that air conditioning service accounted for more than 75% of their total service volume
- 84% of the vehicle air conditioning systems required repairs prior to retrofit
- The customer's decision to retrofit was significantly affected by the cost of R-12 and concern for its future supply, as well as the low additional cost to retrofit when costs of repair are considered.

**National Training Co-ordinator John Bish, summing up a recent member survey, found high satisfaction levels and 'value for money' in the VASA training courses.**

A total of 82 people have attended VASA courses, with the most popular courses being advanced diagnostic and retrofitting, advanced electrical and climatic control.

In order to expand training services, VASA is looking at producing some

## Good Value in VASA Training



John Bish

video support material.

John Bish has also reported an agreement being reached to enable members of the Australasian Bosch Service Dealers Corp Limited (BODAC) to join VASA as individuals. Their numbers nationally total 400, of whom half undertake auto air conditioning service. About 40 of their number are

already members of VASA. Every effort will be made to welcome them aboard.

## IMACA Chief for next Convention



The executive director of IMACA, Frank Allison, will be one of the keynote speakers at the VASA Hot Hot Hot! 97 Convention in July.

The International Mobile Air Conditioning Association is based in Fort Worth, Texas and since its formation in 1958 has served the automotive air conditioning industry and the motoring public by establishing standards for components, procedures and customer service.

As a Not For Profit Trade Association, IMACA is dedicated to developing and encouraging ethical business and service practices and to promote and support those businesses who subscribe to the Code of Professional Practice.

The IMACA Service Procedures meet and in some cases exceed the US Environmental Protection Agency and most state regulations which prohibit emission of refrigerants into the atmosphere from motor vehicle systems.

Since 1993, the EPA has required that all motor vehicle air conditioning service technicians be trained and certified in the safe handling of CFC-based refrigerants.





## A Special World Report

### This month, a Mobile Air Conditioning Alternate Refrigerants Field Study

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#### Background

Under the US Clean Air Act, many alternate refrigerants have been listed as acceptable replacements for CFC-12.

The replacement selected by the world automobile manufacturers is HFC-134a, a single component refrigerant. Unfortunately many additional alternate refrigerants listed under the EPA SNAP rules are blend refrigerants consisting of as many as four different chemicals.

Since the 1995 model year new mobile A/C systems are designed to use HFC-134a. It is currently estimated that there are approximately 90 million CFC-12 vehicles currently in operation in the US. With the current cost of CFC-12 and the expected impending shortages the market must retrofit this fleet to an alternate refrigerant.

With the advent of many blend refrigerants having minimum engineering information being available for mobile A/C use, MACS decided to conduct a field study. The purpose was to define what the average service facility might expect when installing different EPA listed refrigerants in a mobile A/C system. The results obtained from this test sequence will most likely vary when run with different vehicles and weather conditions. Blend refrigerants may also create an additional variable depending on the chemical composition tolerance. It is generally

acknowledged in the chemical industry that the complexity of blend formulation is increased substantially when the number of chemicals is increased. Binary blends are much easier to control than ternary mixtures. The higher glide characteristic of zeotropic refrigerant mixtures increases the difficulty of controlling the composition of these refrigerants.

#### Test Conditions

Two vehicles were selected representing different refrigerant flow devices, one using an orifice tube and the second having an expansion valve. The 1990 Pontiac Grand Am had an orifice tube and V5 compressor, and the 1987 Honda Accord was equipped with an expansion valve and cycling clutch compressor.

The vehicle A/C systems were evacuated and charged according to retrofit procedures and information as recommended by the refrigerant suppliers.

The test was conducted under a typical service facility environment. To understand the operation of the system, a high and low side pressure gauge and eight thermocouples were installed to measure various system temperatures.

The vehicles were located under a covered area with two large circulating fans to minimise random ambient effects in the

area. The vehicles were both operated in park at 1,500 engine RPM, with the windows open and the hood up. The ambient temperature ranged between 88 and 94° F during the test period. After both vehicles stabilised, readings were recorded every five minutes for 15 minutes.

To provide maximum load the system was operated on outside air and high blower speed.

The vehicles, even with high mileage, had the original A/C system components and provide expected cooling as CFC-12 systems.

The refrigerants tested included R12, R134a, FRIGC, Freeze12 and McCool Chill-It GHGX4. Two of the blend refrigerants were available in a large container and small cans.

As recommended by the refrigerant suppliers, all blend refrigerants were liquid charged. The alternate refrigerant amount was less than normal R12 refrigerant charge.

Since the blend refrigerant composition is important, refrigerant diagnostic equipment was used to identify the refrigerant used in the different tests.

The identifier used can only "finger print" blend refrigerants by establishing the percentage of various refrigerants.



# Mobile Air Conditioning Alternate Refrigerants Field Study

This identifier can only identify a refrigerant contained in the blend if it has a reading identification channel for that specific refrigerant. Due to possible cross channel information from other refrigerants the readings may not be accurate.

The instrument used during the tests can identify R12, R134a and air directly. It can also identify the percentage of R22 and HC (hydrocarbons).

The first test was for the repeatability of the identifier. To determine the instrument repeatability, several tests were conducted on the refrigerant samples. The refrigerant identifier was found to repeat within 1.2%.

Our tests also suggested that if the blend refrigerant container was not disturbed either physically or thermally the identifier indicated there was nearly no change. However, because blend refrigerants can fractionate, there is concern that even if the refrigerant charged into the system has the correct refrigerant ratios, those ratios may change during the system operation.

All the refrigerants tested were identified as received in the original container in a vapour state before charging the system. After the system was operated for one minute a second reading was taken and after the test period a third refrigerant identification reading was taken in the vapour state.

## Test Results

Using R12 as the baseline for both the Pontiac and Honda, the observed panel outlet temperature is warmer with all alternate refrigerants. (Figure 1)

## Panel Outlet Air Temperature

When comparing the evaporator heat load on the system to the panel outlet air temperature the loss for the Pontiac was in the one to five degree range. The evaporator heat load on the Honda resulted in the panel outlet air being warmer from one to 11 degrees. The panel temperature of one blend refrigerant was 5 degrees warmer between charging from a large container and small cans. (Figure 2)

## System Pressures

When comparing the compressor discharge pressure on the Pontiac, all the pressures were higher by over 75 psig except for one refrigerant.

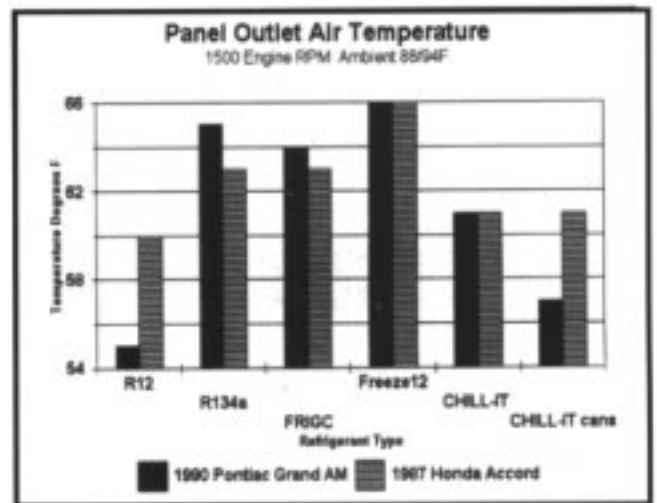


Figure 1.

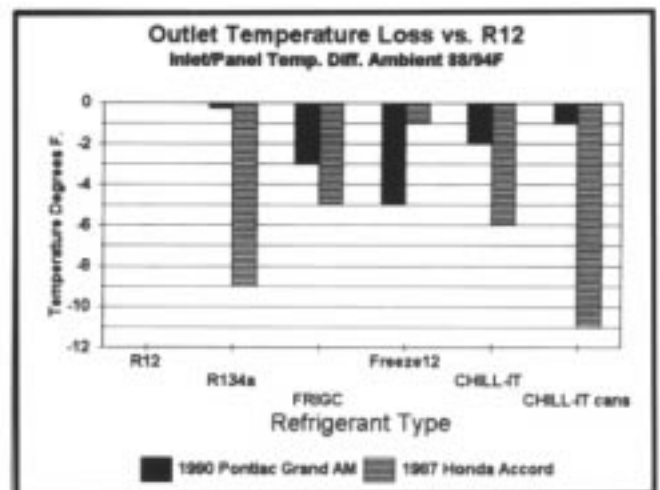


Figure 2.

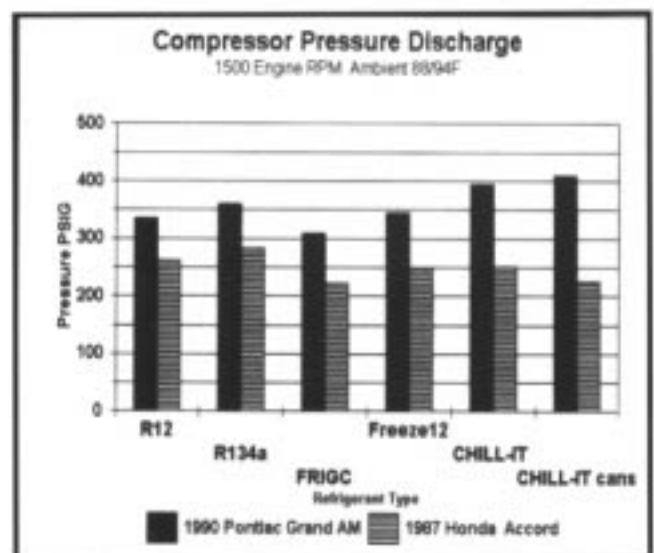


Figure 3.



# Mobile Air Conditioning Alternate Refrigerants Field Study

In the case of the Honda, all other pressures were lower, except for the R134a pressure, which was 20 psig higher. This will be discussed later as these pressures reflect the use of an expansion valve calibrated for R12, thus reducing system refrigerant flow. As expected, the low side pressures reflect the same pattern as the high side pressures. (Figure 3)

## Refrigerant Temperatures

When comparing against R12 high side temperatures, we find that the flooded orifice tube system temperatures ranged from slightly cooler to 10 degrees warmer with the alternate refrigerants. With the Honda expansion valve system the condenser refrigerant temperature with one alternate reached 250° F. Since this temperature was encountered at a 90° ambient there is a concern for the potential failure of polymer materials, such as hoses and seals. By not changing the R12 expansion valve calibration with the changeover to an alternate refrigerant the technician may find a reduction in refrigerant flow, resulting in increased panel and system temperatures. (Figure 4)

As indicated earlier, the compressor refrigerant inlet temperatures are similar with the orifice tube system. The R12 calibration of the expansion valve, due to reduced refrigerant flow, results in compressor inlet temperatures increasing from 81°F to 116°F with one alternate.

## Refrigerant Quality

There are many unanswered questions regarding blend refrigerants. The suppliers of alternate blend refrigerants for mobile A/C use have submitted to the EPA the specific chemical ratios for their products.

To date, the industry has no information as to what may happen to the vehicle A/C system performance if a ratio change should occur. By using refrigerant identification equipment during these tests we were able to identify the refrigerant being used. Since the identifier cannot provide the actual refrigerant composition, samples were sent to the laboratory for analysis for later comparison.

Each container of refrigerant was "finger printed" before it was used and these refrigerant readings were used as the basis for comparison during each test sequence.

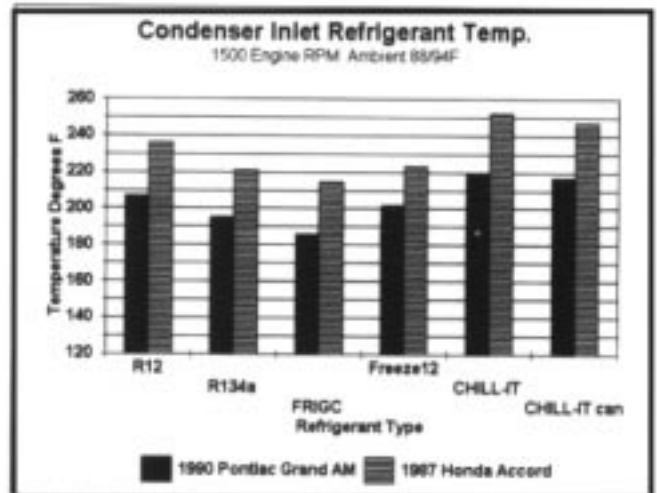


Figure 4.

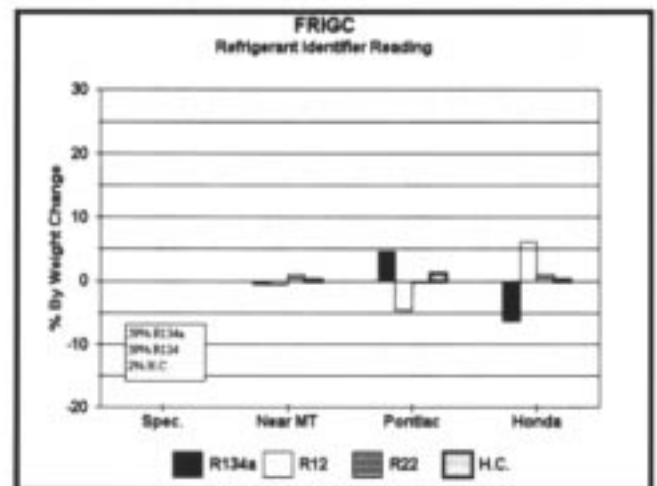


Figure 5.

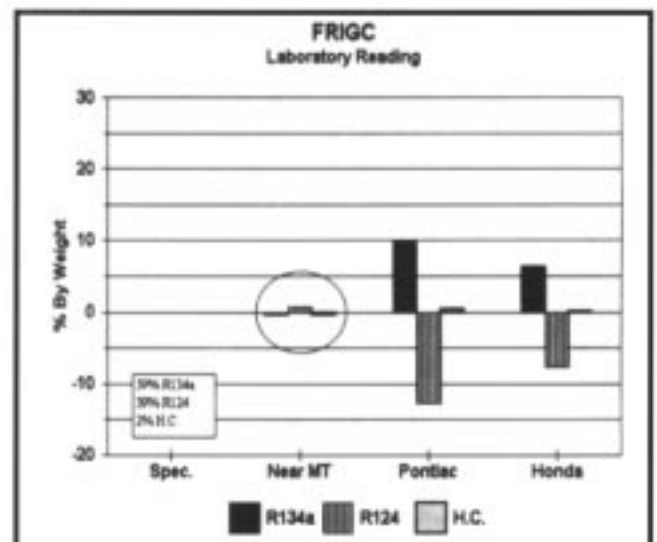


Figure 6.



# Mobile Air Conditioning Alternate Refrigerants Field Study

## FRIGC

At the end of the testing the Pontiac and Honda with FRIGC, the "finger print" reading as compared to the new tank of refrigerant had changed by 8 to 14 percent. One interesting point was the percentage of R134a reading was increased in the Pontiac and reduced in the Honda. The readings for the near empty original container were similar to the original readings, indicating no blend ratio change. (Figure 5)

The original container tested in the laboratory indicated that the contents meet the refrigerant specification. However, the refrigerant removed from both vehicles had changed formulation. Although different than the readings obtained at the test site with the refrigerant identifier they were not near the refrigerant specification. (Figure 6)

## FREEZE 12

Using the same procedure for FREEZE12, the blend ratio changes during the tests were within plus or minus 2 percent of the original tank reading when using the refrigerant identifier. (Figure 7)

However, the laboratory

results again indicated that the container was near specification and the refrigerant removed from the vehicles had changed. (Figure 8)

## GHGX4

The third refrigerant, GHGX4, which contains four different chemicals had the greatest change in readings compared to the original container. Both vehicles' system readings also indicated that a variation of chemical ratios within the refrigerant had occurred. (Figure 9)

The laboratory results with GHGX4 indicated that the refrigerant in the Pontiac had the least chemical ratio change and the Honda had the greatest. (Figure 10)

## Refrigerant Fractionation

The test sequences for each refrigerant did not include any extensive system operating time which demonstrated that any fractionation that occurred was not due to the operation of the A/C system.

As a result of these tests, the following questions should be raised: Did refrigerant fractionation occur in the transfer from the container to the vehicle? Does this refrigeration fractionation affect system perform-

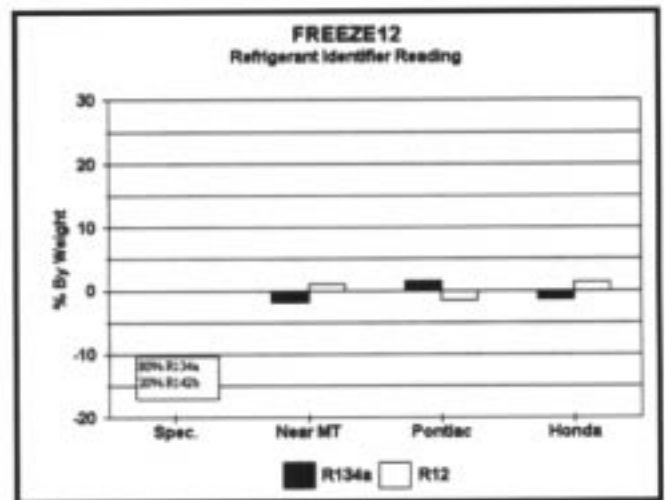


Figure 7.

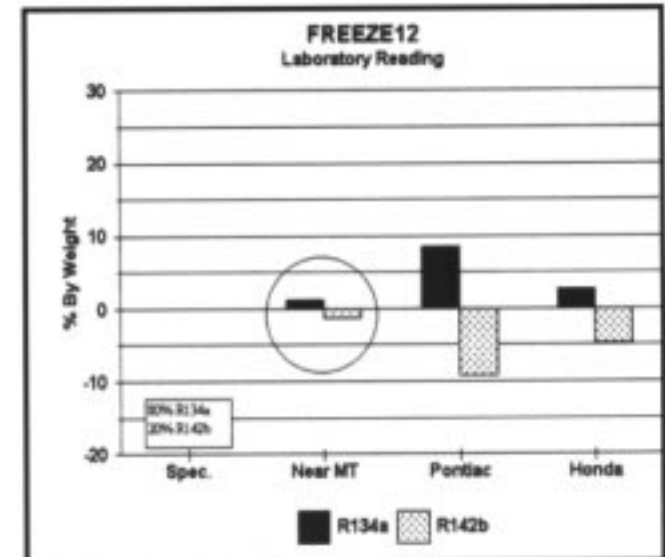


Figure 8.

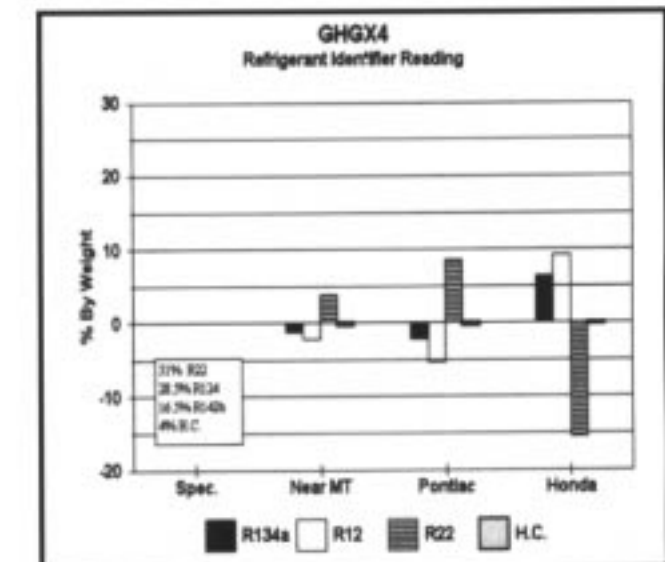


Figure 9.



# Mobile Air Conditioning Alternate Refrigerants Field Study

ance? Why did the refrigerant in the Honda have a greater blend ratio change?

It is important to note that when analysed in the laboratory, the sample containers of refrigerant removed from the A/C systems did not represent the formulation listed with the EPA by the refrigerant suppliers.

Additional questions that were raised include: How do you confirm if the original container of refrigerant has the correct formulation? How do you confirm if the refrigerant has changed during system operation?

What chemical ratio limits (+/-%) does EPA expect in the blend composition of an alternate refrigerant when sold or reused in automotive A/C systems?

It has been stated that blend refrigerants may possibly be recycled on site for reuse. If the field cannot identify the A/C system refrigerant formulation, what refrigerant composition would the field be recycling? What percentage of refrigerant formulation change is acceptable, and how can the field assure that

the recycled refrigerant represents the correct blend formulation? Existing recovery/recycle equipment cannot separate refrigerants. It is therefore question-able if it will ever be economically feasible to recycle blend refrigerants at a service facility.

## Recycling Equipment

SAE certified recycling equipment cannot restore the alternate blend refrigerant chemical composition. If separation (fractionation) has occurred, mobile A/C system performance will not be restored by processing the refrigerant in CFC-12 or R134a recovery/recycling equipment.

CFC-12 recovery/recycle equipment modified for use with an alternate refrigerant cannot be changed back and forth to service different refrigerants. This will result in recovery/recycle equipment contamination.

In addition, the service facility requires dedicated recovery equipment for each alternate refrigerant that is serviced.

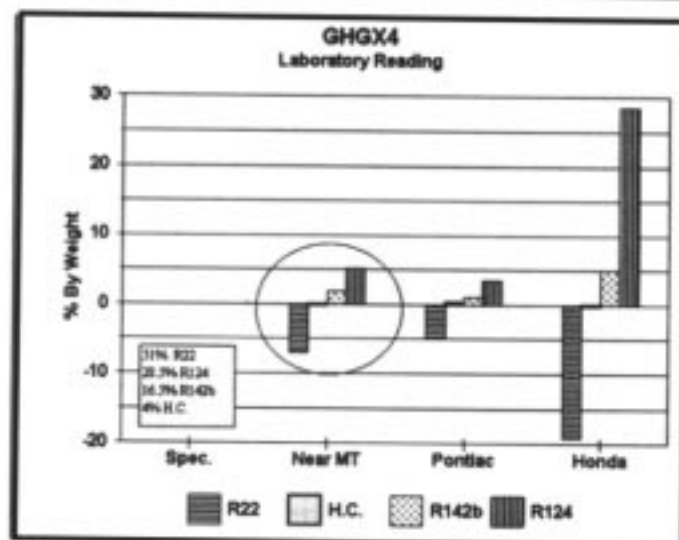


Figure 10.

## Refrigerant Identification

The A/C service facility must identify which refrigerant has been installed in the system. Even with the EPA unique service fitting requirement for each refrigerant, the lack of proper service fittings or a tag is no guarantee for identifying which refrigerant the system may contain.

If the service facility is to protect its investment in refrigerant service equipment it must purchase a refrigerant identifier and check the refrigerant in every vehicle. These cost increases including technician time to perform these services will be passed on to the consumer.

## Auto Industry Refrigerant of Choice

It is obvious that the

automotive industry has selected a single component alternate refrigerant, R134a. From the limited field data, it seems that the ability to deliver a blend refrigerant to the service industry, install it in a mobile A/C system and recover it for reuse raises a lot of unanswered questions.

The original government industry program was designed to make recovery and reuse of refrigerant an economic and environmental reality. The introduction of many alternate refrigerants makes recovery a significant economic burden, and potentially adds to the environment problem.

All alternate blend refrigerants contain an ozone depleting substance. They cannot be vented, and must be



## Mobile Air Conditioning Alternate Refrigerants Field Study

recovered. Currently R134a is the only refrigerant that has certified equipment.

### Reuse of Blend Refrigerants

Under the Clean Air Act it is illegal to recycle blend refrigerants for automotive use. It has been stated by some suppliers that blend refrigerants can be recycled for automotive reuse. Currently adequate procedures are not in place to handle the disposal of contaminated and unusable refrigerants.'

With all these constraints it becomes obvious that a "Leak of Convenience" will occur to resolve a system problem containing an unserviceable refrigerant. As understood under the Montreal Protocol agreement, all the existing R12 is expected to eventually enter the atmosphere. The introduction of these blend refrigerant substitutes accelerates the potential of R12 contamination. Production of alternate refrigerants which contain Class II substances and their potential misuse may add to the the atmospheric pollution problem.

With the recent data indicating that the seasonal ozone layer depletion is the greatest in recorded history, does the addition of alternate refrigerants address the environmental concerns and the US Clean Air Act?

### Conclusions

From the test sequences in this study, it was found that a vehicle A/C system will produce cool air using an alternate refrigerant.

It is difficult for a technician to run a performance comparison test of a retrofitted system without some form of control and sufficient instrumentation.

The observations also indicate that some customers will unknowingly have reduced cooling performance, and a potential reduction in system durability.

Limited test data seems to indicate that re-calibration of the expansion valve is required when using an alternate refrigerant. Reduced refrigerant flow rates can affect A/C system outlet air and compressor refrigerant discharge temperatures. With the reduced refrigerant flow, compressor refrigerant temperature may increase resulting in the reduced life expectancy of hoses and seals.

The flooded refrigerant flow of an orifice tube system seems to be more tolerant when using an alternate refrigerant. However, increased system pressure and loss of outlet air temperature may be encountered.

It is difficult to determine what the refrigerant chemical content of a blend may be in the A/C system using refrigerant identification equipment.

Additionally it is also difficult to remove a refrigerant sample from the system to run laboratory chemical analysis. Since the refrigerant can fractionate there is no guarantee that the sample being removed will be representative of the system content.

This results in the following

problem: What is the chemical composition of the refrigerant being removed from the A/C system? If the refrigerant formulation has changed it cannot be recycled on site for direct reuse. Recovery/recycle equipment cannot remix the blend refrigerant, so if the mixture has changed more than a few percent, what is the effect on system performance? Is that blend legal to reuse? Can these blend refrigerants ever be successfully recycled on site?

It is obvious that the MACS test program was limited in scope and may not represent what may be expected in the field. What this test program does do is illuminate the many questions concerning which procedures and equipment will be required to service A/C systems using blend refrigerants.

The reluctance of many component suppliers to extend warranty on systems using some alternate refrigerants may be justified until more comprehensive testing is completed.

With the problem of fractionation in the A/C system, "top off" service and onsite re-formulation is also questionable. When the refrigerant has changed formulation in the A/C systems, the only logical solution seems to be that it must be removed and sent off-site for processing.

It is evident that with the numerous refrigerants in the automotive service sector there are many unanswered questions both for the service facility and the consumer.



# Up to three years of gas Sales Tax refundable

**Sales Tax refunds will most likely apply to car air conditioning specialists following a recent Australian Tax Office ruling that sales tax is not payable on the Refrigerant Reclaim Australia \$1 per kilogram levy.**

This levy has been paid for years by purchasers of refrigerant gas as part of the phase out plan for the ozone destroying gases.

General Manager of RRA, Michael Bennett, in response to a *Hot Air* query, acted quickly to contact the Refrigeration Wholesalers Association to find out how the refund will be managed.

The Association has advised him that their members, Lovelocks, Actrol, BOC, Kirby, R&H plus other independents are currently negotiating with the Australian Tax Office to find out the best way of returning the money to their customers.

Up to three years of sales tax is refundable.

RRA advises that it would be best for VASA members to contact their supplier to ascertain what arrangements are being made. Most likely copies of invoices will be required to verify the claim. While this may be an imposition, for someone using a tonne per year, the potential return is just over \$600, money better off in the industry than in government coffers.

The sales tax issue has been a cause of considerable anger in the industry for some time. After the industry had put together the Refrigerant Reclaim Australia program, with the encouragement of governments, the industry was horrified to learn that the Tax office intended charging wholesale sales tax on their contribution.

Acting on behalf of RRA, Price Waterhouse undertook extensive negotiations with the Tax Office, resulting in a private ruling handed down in late January.

Michael Bennett said the removal of Sales Tax from the levy is a victory for RRA, the refrigeration air conditioning industry and common sense.

The levy funds the recycling and destroying of ozone depleting substances and in this, Australia is a world leader.

The infrastructure and technology established and encouraged by RRA is a model used and admired by other countries, and the Australian industry should be justifiably proud of its efforts.

## **DROP-IN**

Don't fall for drop-in refrigerants – there's no such thing. That's the advice from VASA technical director Mark Padwick, whose phone is running hot with people who now find they can't buy R12 and are attempting to turn to drop-ins.



In his presentation to the MACS convention in the US, technical director Mark Padwick gave an Australian industry overview. Latest research shows that there are now 10,492 workshops in Australia capable of undertaking air conditioning work on motor vehicles.

These included service stations, dealers, chain stores, tyre chains, independents and auto electrical. There are 500 air conditioning specialist workshops in Australia.

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*This is another bumper issue of Hot Air to accommodate some top line technical info.*

*The Directors have agreed to increase the size of the magazine, but it will remain a quarterly publication. It was also agreed that the amount of technical information should be increased accordingly. Attempts will be made to obtain service manuals and approvals from manufacturers to reprint information for members.*

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"Please be aware there is no drop-in," said Mark.

"406A has a high component of R22. If hoses are not changed to barrier, your customer will be back on your doorstep. ISCEON 49 is mainly R134a, plus, it is more expensive. So why not use R134a?"

## Tapping in to US resources



*Pic shows Mark Padwick (centre) receiving affiliation award from MACS president Simon Oulouhojian (left) and MACS CEO Barry Clement.*

As approved affiliates, VASA is now permitted to display the symbols of both organisations and this will be reflected in Hot Air and all stationery reprints.

VASA president Mark Mitchell has warned on many occasions that affiliation with kindred bodies which have access to "information" and enjoy close liaisons with the key people of the world motor industry, will be essential to the future political strength of VASA.

VASA technical director Mark Padwick was invited to give an overview on VASA and the Australian point of view at the annual MACS Convention recently.

Mark reports that at the same convention, similar affiliations were made with Emaco, Automotive Airconditioning Report, (a magazine produced in the Netherlands in three languages) MACS UK and Aftermarket Research Institute. These ties will provide VASA with valuable sources of information on retrofit blends and new refrigerants from a global perspective.

## VASA Makes Yellow Page Impact

**VASA members are being encouraged to advertise as a group in the various Yellow Pages.**

Members in several districts have done so, with great success.

President Mark Mitchell says its an excellent way for members to promote the VASA standards and get people used to the idea of adopting VASA members for their installations and repairs.

## VASA READY REFERENCE DIRECTORY

1997

### Directors, Chairmen and Deputy Chairmen of Committees

Directors	Phone	Fax
<b>Mark Mitchell (President)</b>	07 5532 8133	07 5532 8602
Glen Watkinson (Vice Pres)	08 8347 1155	08 8268 8048
John Blanchard (Secy/Treas)	03 9890 7333	03 9890 0061
Kevin Matthews	09 275 3344	09 275 5630
Tony Heat	02 9949 5188	02 9949 4243

### PUBLIC RELATIONS

<b>Mark Mitchell</b>	07 5532 8133	07 5532 8602
Chris Lindeman	02 9484 3949	02 9484 8608

### TECHNICAL

Grantley Hand	08 8251 3894	08 8289 4260
<b>Mark Padwick</b>	02 9791 0999	02 9791 9029
		Mobile 0418266132

### TRAINING

<b>John Bish</b>	02 9482 1511	02 9477 7360
Grantley Hand	08 8251 3894	08 82894260

### CONFERENCE 1997

<b>Steve Whitelock</b>	07 3375 5566	07 3375 1404
David Chenoweth	07 3369 3033	07 3369 9169
Geoff Merritt	07 3252 9050	07 3252 4166
Mark Mitchell	07 5532 8133	07 5532 8602

### QUEENSLAND COMMITTEE

<b>Bevan Carrick</b>	07 3375 5566	07 3375 1404
David Chenoweth	07 3369 3033	07 3369 9169

### NEW SOUTH WALES COMMITTEE

<b>Jeff Green</b>	02 9522 6111	02 9522 7138
Tony Heat	02 9949 5188	02 9949 4243

### VICTORIA COMMITTEE COMMITTEE

<b>John Blanchard</b>	03 9890 7333	03 9890 0061
<b>Mark Lynch</b>	03 9532 0785	03 9532 1010

### SOUTH AUSTRALIA COMMITTEE

Glen Watkinson	08 8347 1155	08 8268 8048
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### WESTERN AUSTRALIA COMMITTEE

<b>Kevin Matthews</b>	09 275 3344	09 275 5630
<b>Paul Robinson</b>	09 279 3336	09 279 3156

The information in this newsletter is supplied by the executive and members. VASA maintains a high standard of editorial and technical content, but can accept no responsibility for the accuracy of the statements made nor the technical information provided. If in doubt about any issue, contact an appropriate committee chairman or a member of the National Executive.

## EPA PROSECUTES

**The Environment Protection Authority has successfully prosecuted a Sydney auto electrician for allowing the release of R12 into the atmosphere – an offence under section 17a of the Ozone Protection Regulations.**

The EPA alleged that the repairer regassed an air conditioning system on a 1988 EA Ford Falcon in January 1995, and was aware or should have been aware that the evaporator was leaking.

The company was fined \$3000 and ordered to pay costs of \$2000.