

## Food &amp; Drink

## Time to get hot on temperature control



**Jancis Robinson**  
WINE

Last summer one hundred cases of very fine wine indeed had to be poured straight down San Francisco's drains. They had been shipped from Arizona for an auction and because the owner knew that they could encounter temperatures of more than 100°F/38°C en route, he paid the extra to have the wine shipped in a reefer, a temperature-controlled container. The only trouble was that someone turned the temperature so low over the weekend that the wine froze and started to push out the corks, fatally letting oxygen in. The result was a \$100,000 insurance claim.

In 2003 a Hong Kong wine importer also had to claim for an entire container-load of wine, this time from Australia. When it arrived at the warehouse it was, worryingly, warm to the touch. Even an hour later, when a surveyor had arrived, the temperature inside was 93°F/34°C and nearly all the bottles had their corks either popped out or bulging from the capsule. The wine had this time expanded due to extreme heat.

James Hocking of Sir Peter Michael's Vineyard Cellars, a specialist importer of fine California wine into the UK, admits, "I'm fanatical about temperature control and always ship in reefers. I had a bad experience once. Twelve hours at too high a temperature is all it took. Frightening is the word."

Boston entrepreneur and fine wine lover Eric Vogt has been touting a new system for combating wine fraud around Bordeaux over the past year or so. One of the three pieces of hardware that comprises his eProvenance system is a credit card-like bit of plastic which, using radio frequency identification, can be read without opening the case. It is designed to complement a tamper-proof

neck seal (the most common fraud entails filling old empty bottles with the wrong wine) and a fully traceable tag that goes into the base of every bottle. The card goes into each case of a dozen bottles and is able to log the temperature every eight hours so that eProvenance.com can supply a complete record of the temperatures at which that case of wine has been kept – to those who sign up.

When, over dinner with Jean-Luc Thunevin of St-Emilion's Château Valandraud, he explained about his special temperature-measuring device, Thunevin laughed loudly. "So you want to get assassinated?" he asked Vogt.

It is true that the results of inserting the smart card into 1,200 trial cases shipped from Bordeaux all over the world over the past six months are explosive. The temperature graphs suggest that even wines shipped from Bordeaux's *négociants* (merchant middlemen) in reefers can experience extremes of heat and cold at some point on their journey, typically at the beginning or end. "And sending wine to London in late summer, for instance," he told me earlier this year, "you could trace the day/night variation of a truck lumbering towards the UK. Because of these concerns we're giving data on temperature profiles back to the châteaux only if the *négociant* and wholesaler sign an agreement with a mutual covenant to hold everyone blameless."

Quite. It would seem that, as useful as this data would be, it will be some time before it finds its way into the consumer domain – although it could prove a useful spur to improving shipping standards, just as it was only when technology was introduced in

2000, which proved just how high a proportion of wine corks were tainted that the cork industry started to mend its ways.

Vogt's is by no means the only authentication system that has been developed for fine wine now that the potential for fakes has increased along with fine wine prices and the globalisation of the market. But the likes of ProofTag and Applied DNA Sciences do not incorporate this temperature tracking. In general producers of the wines most commonly targeted by fraudsters are understandably reticent about the

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methods they use to fight them, which can include banknote quality printing of labels, invisible markings and DNA profiling of both packaging materials and the wine itself. It seems that for the Bordeaux châteaux currently trialling eProvenance, it is the temperature monitoring part of the system that is of most interest. Vogt reports four times more interest in his "Intelligent Cases" equipped with temperature-sensitive cards than in his tagged and neck sealed "Intelligent Bottles".

But if wine producers are interested in shipping temperatures and conditions, it would seem that some of their customers are, worryingly, less so.

I asked Chris Porter of fine wine forwarders Porter & Laker, a subsidiary of the specialist Hillebrand, how common it was for British wine importers to use reefers or any other form of temperature-control such as their special thermo-liners, insulated units or even a thick blanket that can be quite effective and much less expensive than a reefer, which costs about £2,000 for a shipment of around 1,000 cases. He told me it was "surprisingly uncommon" even for fine wines and that his company have only a handful of requests a year for such careful treatment of even the most expensive wines.

"Most of them tend just to take the risk. The ambient temperature during most shipments varies enormously, as anyone who has taken the trouble to monitor it knows. But it's only those logistics controllers who really want to get to grips with it that take the trouble to install any temperature monitoring device in a container. And that's usually driven by a bad experience. They do tend to wait until something goes wrong."

He singled out for praise New Zealand wine producers who tend to insist on temperature controlled shipments. Many American wine importers insist on reefers, and the Ontario liquor monopoly, LCBO, which has to contend with some extreme temperatures, has long insisted on temperature control for shipments of its more expensive wines throughout both the long Canadian winter and in the height of summer. But most British wine importers seem to hope that by avoiding shipping during the height of summer they will be sheltered from the worst. Perhaps climate change will affect wine shipping

along with vine growing?

That said, although there is no shortage of anecdotal evidence of the harm that extreme temperatures can inflict on wine, there is very little hard scientific data. Dr Christian Butzke and others at the University of California, Davis, published a useful paper in 2002 after having monitored wine shipment temperatures. Their observations suggested that reefers really do work, provided the temperature controls are properly set of course, and confirmed that high temperatures accelerate the ageing process and can make a wine start to go brown and lose its fruit prematurely. But it is difficult to be definitive about precisely which temperatures really damage wine.

Generally 55°F/13°C is suggested as the ideal cellar temperature, with an entirely anecdotal maximum of 75°F/24°C, and 23°F/-5°C a dangerous minimum at which lighter wines start to freeze. Different sorts of wine demonstrably react differently. Most connoisseurs find that red burgundy is one of the most sensitive types of wine, port the least. On the other hand, now that I have learnt that so much Chilean wine is shipped to the UK via the Bahamas, I have newfound respect for its robustness. British freight forwarders are yet to receive a complaint about heat damage to Chilean wine in transit, while the same can not be said about all the Australian wine that has sat in Singapore awaiting a northbound vessel.

More research, and more reefers, please.

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