

'Warm or cold: is it a game?'

Q&A

On Wednesday 14 October 2020, TT Club's Mike Yarwood invited two experts in the temperature controlled supply chain to talk through the most common risks and how to mitigate them, as well as a glimpse into the future of cool chain technology.

Mike was joined by Carsten Jensen, Founder and Managing Director of Jensen Associates, and Luc Terral, CEO at Reeferpulse.

During the webinar, we received many questions from the audience showing the popularity of the topic. Unfortunately, we were unable to answer all questions during the timeframe, so we caught up with the speakers after the event to find out more.



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In session poll results

What do you perceive to be the primary risk type that causes losses in the temperature controlled supply chain?

- Equipment failure
- Ambiguous/incorrect instructions passed between stakeholders
- Ambient temperature at the point of loading
- Temperature of the cargo at the point of loading
- Operational error – equipment not plugged in



In your experience, when an issue arises, how often do you think the root cause is linked to human error?

- 0% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%



What do you feel would most effectively reduce incidence of temperature controlled supply chain related losses?

- Greater access to real time data (condition/settings)
- Greater control (remote access to set point temperature)
- Greater transparency at the point of loading
- Greater certainty regarding the maintenance of the equipment
- Greater awareness about the functionality of the equipment



Q&A

Question 1

What do the panel consider to be the level of intervention required by the ship's crew when they find a reefer box malfunctioning?



The ship's crew should of course try to repair the unit whenever possible, the reefer electrician and engineers would normally be able to carry out most minor repairs. If they are in any doubt or are unable to fix the issue, possibly because of the location of the reefer or when a major change of key parts is required, they should inform the container operator and get in touch with their technical department. The technical department will often be able to guide on fault finding and any possible temporary repairs, which could help minimise or avoid damage to the consignment.



Question 2

If the carrier is not willing to share the data logger information, how can we prove the incident is due to container malfunction?



It is not possible for a cargo owner to prove container malfunction specifically, but if portable temperature recorders are installed and these show major deviations, this would be an indication of either a malfunction or a significant off power period, whether or not this was due to a malfunction.

The consignee should ask and receive a temperature log for the trip duration at arrival. This log has to track and show internal reefer temperature every hour, and will show temperature breaches - if any. The time and date of the breach will give you a hint as to when and where the incident occurred, but will not tell you the cause of the incident (power cut on board the ship, reefer technical dysfunction, reefer poorly stored, or reefer not properly setup). The carrier is not obliged to disclose this information.

There might be sound commercial and regulatory value for cargo interests to consider their own monitoring solution to ensure end-to-end quality.



Question 3

What cargo securing systems are there in reefer containers?



There are no permanently installed systems inside a reefer container.



Question 4

With the target reductions in GHG emissions, what efforts are being made to lower emissions from the power producers that keep reefers cool? A considerable amount of energy goes into reefer cooling.



Modern reefer equipment is optimized for efficiency and continues to be developed to promote environmental performance. Studies reveal that reefer energy burns around 20 million tons of heavy fuel and emits over 15 million tons of CO² every year. Most of the reefer's energy comes from heavy fuel on board ships, and, until cargo ships run on ammonia, H² or any non-fossil energy, the only possible optimisations are making sure the reefers are properly maintained and operated. There are solutions that can help save fuel and emissions, such as Reeferpulse.



Question 5

Can you offer any advice regarding shipping instructions for mixed vegetables in reefers?



The important part here is to ensure that all products are compatible in terms of requirements for temperature, ventilation, humidity control and atmospheric conditions. It must also be ensured that they do not taint each other, whether by strong odours from the product itself, or by any fumigation treatment which may be beneficial to one product, but harmful to others if kept in the same enclosed space.



Question 6

Is it acceptable to spray organic produce prior cargo stuffing with products that are safe for human consumption?



If chemical treatments are used for organic products then it is no longer organic, but may still be used as conventional product. Again, specific guidance should be sought from local research institutes or export organisations who provide agronomic guidance to farmers and exporters.



Question 7

What kind of chemicals are available to avoid cargo spoilage?



Various types of treatments are used for different products, which are often also dictated by regulations in both exporting and importing markets. They are too numerous to be listed here. For specific information it is advisable to contact local research institutes or export organisations who provide agronomic guidance to farmers and exporters.



Question 8

How reliable are controlled atmosphere reefer shipments say for sensitive fruits?



If the preparation is properly done, such shipments don't impact food quality nor their life duration, including sensitive and perishable fruits. For those shipments that are impacted, it is generally due to a technical or operational fault.

There are several different controlled atmosphere systems available today, some will be more suited for a given product than others, so it is necessary to look at the specific product. Some sensitive fruits will benefit from controlled atmosphere, others will have none or very limited advantages from it. The main systems offered today are widely used and have good operational reliability.



Question 9

When fruits at various ripening stages are stuffed, a specific temperature setting is needed for each stage, which cannot be controlled by the reefer equipment. How can shippers handle such stuffing effectively?



Fruit at various stages of ripening are not suitable for transport in reefer containers, as the riper fruit will potentially set off early ripening in the whole consignment. The shipper needs to ensure that the product is as uniform as possible and at an even stage of ripening, which is part of the post-harvest sorting and selection process. The reefer equipment is designed to maintain the set point temperature and not change the temperature of the cargo.



Question 10

What are your comments and advice in relation to cargo that is hot stuffed?



The general rule is indeed that all products should be pre-cooled to the required carrying temperature before stuffing. However, for certain commodities like bananas and pineapples, the infrastructure is simply not available. As it has been proven over the years that these products can withstand the duration and type of transport, despite being hot stuffed, many carriers have chosen to accept this, otherwise they would not be able to service these markets. Any carrier is of course free to decide whether or not they wish to be involved in such trades.

