Blue Tree Systems

7 KEY CHALLENGES TO REFRIGERATED TRANSPORT

How Blue Tree Systems helps to address them

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INTRODUCTION

If you own a transportation company and distribute refrigerated products – from food to high value pharmaceuticals, from cosmetics to industrial chemicals – then you'll know the new challenges facing your business.

- Food safety legislation is becoming more stringent.

- Customers are more discerning about the quality of cargo they are receiving.

- Refrigeration units are more complex.

- Specifying new trailer and truck refrigerated bodies requires a degree in thermodynamics.

- Cargo values are increasing year on year.

In reality, transporting refrigerated products is becoming a science. Only the transporters who approach it as such will prevail in this industry in the future.

THE PROBLEM OF REJECTED LOADS

The implications of these changes can be crystallised in a 'rejected load'.

It is estimated by industry analysts that 32% of refrigerated cargo loaded onto refrigerated vehicles is at the wrong temperature at time of loading. In most cases, the cargo is warmer than requirements dictate.

Being caught delivering a cargo at the wrong temperature quickly spirals into costs so significant for the transporter that they far outweigh the invoice value of the job in the first place. When a load is rejected:

- The transporter has to compensate the shipper for the value of the spoilt cargo by direct financial payment or through an insurance claim.

- The cargo has to be disposed of in an environmentally friendly manner which can be expensive for the transporter.

- If an insurance claim is paid out, the transporter faces an increase in insurance premiums for years following the claim.

But the most significant cost is the damage to the transporter's reputation. Losing one's reputation as a quality service provider can result in loss or reduction of future business. Reputation with a customer is built slowly – but it can be lost instantly by one spoilt load.

TRADITIONAL AVOIDANCE METHODS

Many transporters try to mitigate the risks associated with refrigerated cargos by:

- Renewing their fleet equipment regularly: The younger the equipment, the less likely it is to cause a problem. However, this adds complexity to the situation. Modern refrigeration unit are complex machines and can have more than 200 fault or alarm codes.

- Training drivers: Training drivers on a regular basis on best practices in refrigerated cargo handling and operation of the refrigeration unit is a pro-active measure. But with increased driver turnover, a focus on driving more safely and increasingly complex refrigeration units, drivers have less knowledge and time to spend on managing their cargo as well as themselves.

- Installing a temperature datalogger: Dataloggers are useful tools for post-event analysis and reporting. The issue for owners is that dataloggers can't anticipate and prevent problems until it is too late – and the damage may already have been done.

- Paying insurance premiums: Transportation owners spend a lot of money on buying appropriate insurance policies to protect their business in the event of an incident. While claim payouts are always welcome, insurance doesn't cover you for the loss of customer goodwill, and the potential damage to your reputation as a transportation provider.

THE ALTERNATIVE

While all of these ideas are worthwhile and beneficial to an extent, they are not enough to protect your business fully.

In this document, we will examine 7 of the most significant and common challenges that carriers of temperature-sensitive products face today – hot loads, equipment failure, driver error, late notification of problems, providing proof after an incident, regulations compliance and lack of remote control – and what you can do to overcome them.

01

CHALLENGE:
AVOIDING HOT LOADS

32%
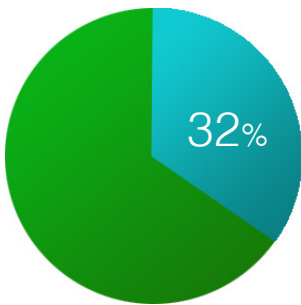
OF REFRIGERATED CARGO IS LOADED AT THE INCORRECT TEMPERATURE

Industry analysts estimate that 32% of refrigerated cargo loaded onto refrigerated vehicles is at the wrong temperature at time of loading. In most cases, the cargo is warmer than requirements dictate.

The loss of temperature typically happens as a result of poor loading practices. The produce is left sitting too long on the loading dock prior to loading. Unaware that the load is loaded 'hot' or at the incorrect temperature, the transporter runs the risk of the load being rejected by the receiver when they try to deliver it - which can mean a load claim and all the pain associated with such an incident.

If the load is 'hot' at the time of collection, then most likely it is going to be 'hot' at time of delivery. Many transporters believe that the refrigeration unit will correct any discrepancy in loaded cargo temperatures. It might - but it will take a very long time if it manages it at all.

Refrigeration units are not designed to alter the temperature of the cargo. They are merely designed to maintain the cargo at the loaded temperature by cycling enough air around the cargo to prevent further temperature loss. For example, if a refrigerated trailer is loaded with cargo at -16°C instead of the intended -20°C, it will take a modern high powered refrigeration unit (operating in a mild ambient environment) approximately 1.5 days to reduce this cargo temperature by approximately 1°C. That means it will take as long as 6 days to reduce it to -20 °C (i.e. a 4°C reduction required).

SOLUTION:
ADVANCED TEMPERATURE MONITORING

Blue Tree's technology can detect 'hot loads' within 30 minutes of loading. The transporter is automatically notified of the warmer-than-expected cargo and the severity of the problem. They can take immediate action to protect themselves by contacting the shipper, advising them of their error and providing immediate evidence straight from Blue Tree's software via email.

The decision on how to proceed now rests with the shipper. They can decide to have the transporter return the shipment for inspection. Or, if the temperature breach is slight and within safe tolerances, the shipper may advise the transporter to proceed with the delivery and they will assume all responsibility if the load is rejected based on incorrect temperature.

Blue Tree's Refrigeration Monitoring system is connected to Thermo King and Carrier controllers and dataloggers to retrieve essential unit operational information. It uses the data available from these controllers to feed its algorithms which determine the 'hot load' event. This technology has been developed as a result of years of research and provides the ultimate protection for the transporter.

The system provides automated, continuous reefer status updates every five minutes. Exceptions are reported in real time. Refrigeration unit status information includes unit on/off, set-point, return air, discharge air, mode of operation, active alarms, fuel levels, hour meter reading and more.

02

CHALLENGE:
EQUIPMENT FAILURE

Refrigeration units are complex electro-mechanical machines that can and do break down.
If the equipment fails, then the temperature sensitive cargo is at risk. Just as if an air conditioning unit in a room fails, the room temperature will not be maintained.

Modern refrigeration units can have more than 200 alarm or fault codes. Put another way, this is 200 ways the refrigeration unit could develop a problem which could threaten your ability to maintain the temperature of the cargo being transported.

SOLUTION:
INTELLIGENT ALARMS

Blue Tree protects the transporter by notifying them immediately if a refrigeration equipment fault occurs. The notification (by email or SMS message) is sent to the office and the driver. It includes the fault code number together with a description of the fault and its severity (Green, Amber Red as specified by the manufacturer). The transporter can then advise the driver what immediate action to take to remedy the fault and safeguard the cargo.

Active Alarms   R:COM®
Most recent data.
For Vehicle: R53516   Schedule PDF Export Print

Vehicle	Time		Alarm Code	Description	Severity	Staleness
R53516	3/4/2014 7:15 PM	🔺	17	Engine Failed To Crank	Shutdown	
R53516	3/4/2014 7:04 PM	⚠	157	OptiSet Plus Profile Mismatch	OK to Run	
R53516	3/4/2014 7:15 PM	⚠	84	Restart Null	OK to Run	

03

CHALLENGE:
DRIVER ERROR

Transportation companies need drivers to be able to configure refrigeration units to optimise performance for the cargo being transported. At a minimum, the driver must be able to configure the set-point for the unit. They may also be required to set the mode of operation of unit to either continuous run or start/stop mode, and to perform a manual defrost of the refrigeration unit when required.

However, refrigeration units are both complex and different. To perform these basic configurations, drivers must be familiar with the operation of the controller of the refrigeration unit, which varies across makes and models.

This poses a big challenge to transporters in terms of driver training. It also exposes them to risks of driver mistakes when operating the equipment. For instance if the driver changes the set-point to -2.0oC instead of -20oC then this can result in the cargo being spoilt and rejected by the receiver.

SOLUTION:
AUTOMATIC ERROR DETECTION

Blue Tree protects the transporter by continuously updating them on the configuration status of the refrigeration unit and any changes made to the unit. If a driver incorrectly sets the set-point of the unit – and it is not noticed by office staff – then Blue Tree's advanced monitoring algorithms will automatically detect the problem and notify the transporter immediately. The notification will be sent by email or SMS message to the office and includes the current configuration of the refrigeration unit for their review. The transporter can then advise the driver on how to remedy the mistake.

04

CHALLENGE:
LATE NOTIFICATION

With temperature-sensitive and perishable products, you need to identify problems before they become an issue. Saving a load when something goes wrong or fails requires real-time data, immediate notification, and identification of the cause and prioritisation of the issue.

You cannot rely on the driver to detect a fault immediately it occurs. The driver has little visibility to the controller of the refrigeration unit of a trailer or draw bar trailer when on the move (unless of course they are using Blue Tree in-cab refrigeration unit monitoring app). It may be four hours or more when the driver stops (hopefully not at the delivery point) and they finally get the opportunity to inspect the refrigeration unit and then discover the fault.

SOLUTION:
REAL-TIME DATA

Blue Tree provides early warnings of issues through real time temperature monitoring of the cargo. The solution can be easily configured to monitor temperature depending on the types of cargo carried; users can set variations depending on the required tolerance levels for the products being transported.

'Out-of-range' temperature conditions are reported immediately they occur, together with comprehensive information to better understand the severity of the problem. This includes the current temperature of all sensors, the sensor that is out of range, how long it has been out of range, and also the operational settings and status of the refrigeration unit. The alarms can be configured to be reported by both email and SMS text message to one or many people.

Blue Tree's Temperature Management solution protects your cargo, reduces business risk and costs and allows you to deliver higher quality standards.
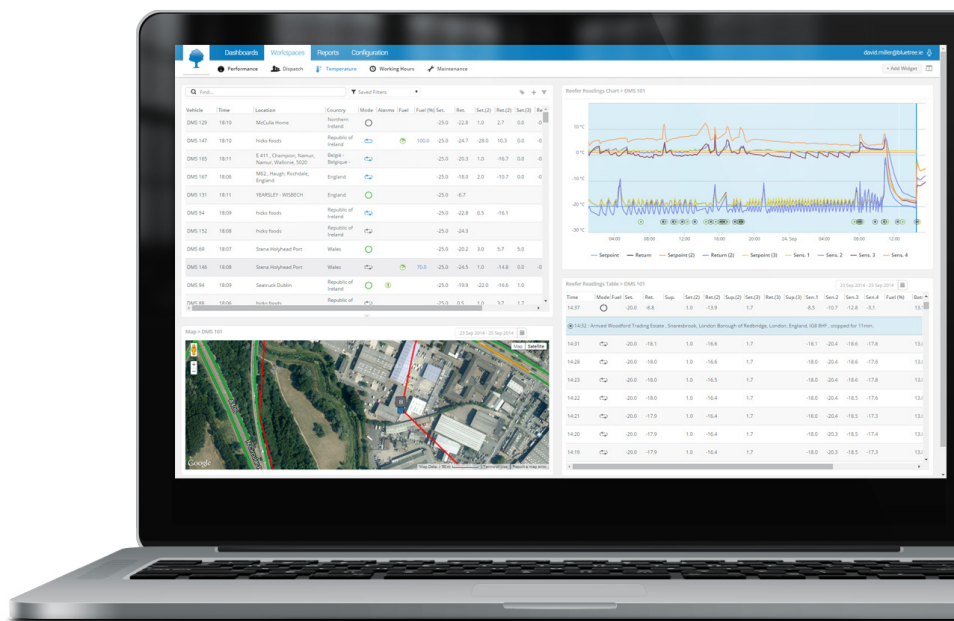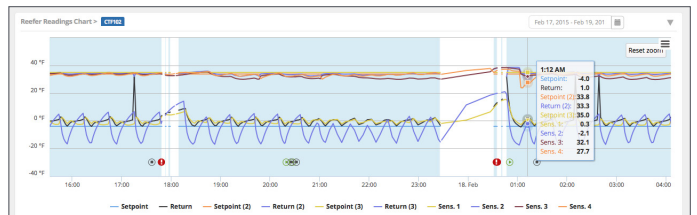
05

CHALLENGE:
IMMEDIATE PROOF ON DELIVERY

When something does goes wrong, the transporter is often the first one blamed. On occasions, you may find yourself needing to prove the conditions in which the cargo has been transported. Compliance, auditing and documentation are required every step of the way.

SOLUTION:
DOCUMENTED PROOF ON DELIVERY

You can reduce claims by quickly and easily providing proof of in-transit temperatures with Blue Tree. If done immediately and while at the receiver's dock, you have a far better chance of delivering the cargo and avoiding the costs and disruption of a rejected load.

When there is a temperature query with a load being delivered, the data can be immediately sent to the shipper or receiver in high quality graph or table formats via email. This can happen instantly – even while the while the cargo is in transit or at the loading dock. It can also save money by avoiding a trip to a refrigeration dealer for a download or avoiding the down-time of the trailer for the day. Geo-fencing and watchbox alerts can also be used to automatically notify you when a vehicle is approaching or has arrived at a location that requires proof of temperature for each delivery, so that you can dispatch the reports in a timely manner.

06

CHALLENGE:
COMPLYING WITH REGULATIONS

Regulations covering the temperature controls distribution and logistics industry are only moving one way – towards more stringent rules, reporting and record-keeping.
Transportation companies are impacted daily by the implementation of new rules which aim to keep food supply safe.

Transporters of temperature-sensitive goods will need to develop and implement procedures to describe how they will comply with provisions for temperature control and how they will provide this information to both shippers and receivers. Drivers will need to be trained on temperature management and reporting requirements, and temperature records for each shipment will need to be retained.

SOLUTION:
COMPREHENSIVE RECORD KEEPING AND SCHEDULED REPORTING

Blue Tree provides documented tracking and status of refrigerated vehicles with position and status updates every 5 minutes. Utilisation information including dwell times, trip and stop data are recorded. Scheduled reporting can be used to receive PDF or Excel reports directly over any timeframe. Summary reports can be provided on a daily, weekly, monthly or annual basis.

07

CHALLENGE:
LACK OF REMOTE CONTROL

Today's frozen and chilled loads are getting more complex. Comparmentalised vehicles, multi-temperature, multi-zone loads can be difficult for drivers who may not have the experience or skills to monitor, analyse and fix temperature problems. Instead, control from the dispatch office without involving the driver can be a more effective solution.

SOLUTION:
TWO-WAY CONTROL

Blue Tree allows approved users remote, two-way control of the reefer unit which eliminates the potential for local, manual intervention to go wrong. Remote control features include switching the reefer on/off, initiating defrost, clearing unit alarms and changing mode of operation from any location at any time.

THE SOLUTION

The 7 challenges discussed in this document are real, justifiable concerns for refrigerated transport owners. But there are comprehensive, in-depth solutions available to meet them.

Blue Tree's temperature management technology affords you FULL protection. By providing complete control of the environment - in real-time, remotely, on any device and from any browser – we protect your temperature-sensitive cargo, reduce your business risks and deliver perishable products safely, on-time and in compliance with tomorrow's rules and regulations. With 20+ years of experience of working with refrigerated transporters, we would be happy to show you in detail the most advanced temperature management solution available in the marketplace. For more information, visit:

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