

What is RCM and what legal considerations does it give rise to?

Remote Container Management (RCM) systems that allow for cargo to be monitored remotely have been around for a while. Predominantly installed by charterers or liner operators to assist with monitoring reefer containers onboard, they provide round the clock data. Some operators supply a form of this data to their customers.

How RCM works

Although there are some differences depending on supplier, each RCM system works in a broadly similar manner.

The system uses a computer chip and modem transmitter integrated into the reefer. This continuously sends information from the container to a receiver system onboard, which in turn transmits the information back to the shore based mainframe. This is usually done via a VSAT dome installed onto the vessel.

If the RCM system notes an abnormality in the container, e.g. a temperature deviation or an alarm sounding for a specified period of time, a message is automatically generated and sent to the ship for investigation.

Since their first introduction, RCM systems have become more and more sophisticated. They can now monitor a range of parameters including temperature, atmosphere and send power on/off alerts. They can also be customised to include GPS monitoring and door opening alerts. Therefore, although they are predominantly used for reefer cargoes, they may also be an attractive option when shipping dangerous cargoes or high value cargoes.

System weakness

Due to national regulations on what information can be automatically transmitted whilst in territorial waters, RCM systems are subject to black out periods. For most systems, these are

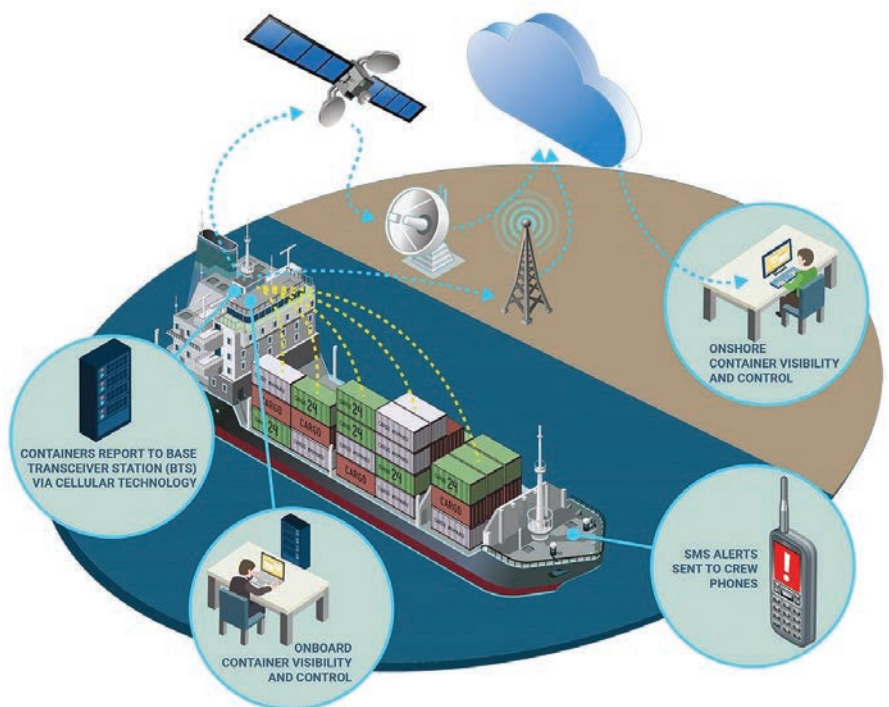


Diagram courtesy of Orbcomm

pre-programmed through the inclusion of geofencing. Geofencing uses GPS technology to create a virtual geographic boundary, e.g. when a vessel enters territorial waters, it enables the software to trigger a response whenever the devices enter or leave the boundary area.

Geofencing allows the system to continue to record the performance of the container whilst within territorial waters but limits the information feedback to the mainframe.

Contractual considerations

Considerations under RCM service agreements

Any agreement between an operator and the RCM service provider is likely

to include terms in respect of the following:

- the sale or lease of the equipment and
- the provision of the data service

Terms will vary depending upon whether operators elect to purchase or to lease the equipment, but care should be taken to pay particular attention to terms in relation to notification periods (of issues), time bars, liability limitation and cyber security.

Operators may also wish to consider measures to ensure that any damage to equipment liabilities terms in the sale or lease agreements are back-to-back, either through terms added to their bills of lading or in their service contracts.

REMOTE CONTAINER MANAGEMENT

Considerations under charterparties

(i) RCM and owner's responsibility towards the cargo

An owner's responsibility towards reefer containers is usually limited to the provision of electrical power and endeavours to monitor and record the performance of a unit whilst it is onboard. In the event of breakdown, repairs are to be attempted by the crew but commentary suggests that the crew will, in such instances, be considered as charterers' servants. Therefore, charterers have no (or very limited) recourse against owners if they consider that repairs have not been done properly or were insufficient. In return however, the charterers benefit from the crew's labour free of charge.

Clause 17(b) BOXTIME 2004 demonstrates this:

*"...In respect of integral refrigerated containers or blown-air containers with a marine refrigeration clip-on unit attached or any containers with any machinery for temperature/atmosphere control containing goods, the **Owners shall be responsible for the provision of electrical power only.** The **Owners shall endeavour to monitor and record the performance** of all such units whilst on board in accordance with the Charterers' instructions and to repair and rectify any breakdown, fault or deficiency which may occur in respect of such units, using the resources on board the Vessel. If repair works are performed, all additional expenses incurred by Owners, including spare parts, shall be for the account of the Charterers and the Vessel's crew shall always be considered the Charterer's servants. If such resources are insufficient, the Owners shall immediately notify the Charterers so they may take action to obtain any required spares or specialised repair facilities. Except as provided above, the Owners shall not be liable for malfunction of integral refrigerated containers and power packs put on board by the Charterers."*

The RCM system is designed to assist with the crew's monitoring of the containers, but (subject to maintenance) it does not appear to materially vary the underlying contractual position. If the

RCM highlights an issue with a particular container then:

- Subject to any more pressing issues arising on the vessel at that time, the crew must investigate the problem. This investigation is limited by (i) weather and (ii) container location considerations (e.g. if the container is at the top of a stack and there are strong winds, then it would not be safe for the crew to investigate).
- If the crew have the resources to fix the problem then they must endeavour to do so.
- If the crew's repairs are ineffective then *prima facie* charterers do not have any claim against owners (subject to any other breaches of the charter).
- If the crew cannot fix the problem because of a lack of resources, then they must simply notify charterers and ask them to procure spares or locate an expert engineer at the next port-of-call.



Although the primary purpose of an RCM system is to monitor cargo, a by-product of this system is its ability to provide shippers with detailed information about the status of their shipment throughout the voyage. It has been speculated that providing more information may lead to an increase in claims or abandoned cargo, especially if this information is in a format shippers may be unfamiliar with. Market

competition and commercial pressure combined however leave operators with little option but to provide the information to their customers.

(ii) RCM's maintenance obligations

Although installed by charterers, there is an argument that an RCM may become part of the vessel's equipment. This would mean that the owners' general due diligence obligations to maintain and repair any defects would arguably apply to the RCM system too. This may place an additional burden on owners, and potentially give rise to a liability exposure if a fault arises in the RCM system which owners fail to remedy within a reasonable time.

As RCM is a fairly new development, pro-forma charterparties do not as yet include specific clauses to address their installation and maintenance. If Members are considering installing or agreeing the installation of an RCM system, they are advised to consider the inclusion of a bespoke clause to address maintenance obligations in relation to the system.

Future developments

Although RCM systems are currently used to monitor cargo, some systems are being developed to deal with increased supply chain risks (such as theft, contamination and smuggling) and a tougher regulatory climate. RCM systems could easily be developed to monitor everything that a container experiences (including location and door openings), so as to be used to establish a chain of custody and become an integral addition to the Internet of Things (IoT) technology – allowing for real-time connection of physical assets to the digital world.

As RCM systems become more sophisticated, the possibility of two way communications with containers will become a reality, with operators (or their shippers) being able to adjust temperature and atmosphere settings remotely. This in turn would allow operators to cater for a wider range of cargoes and carriage options.