The Global Reefer Trade
Trends, risks, claims and loss prevention

by

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Reefer world trade
Reefer trade by commodity (2004)

Source: Drewry
Reefer cargo mode of transport (1)

Stowed as breakbulk or on pallets on board a conventional reefer ship operated by specialist reefer carriers.

Total world fleet: +/-860 ships. Capacity up to 7,000 pallets per ship.
Reefer cargo: mode of transport (2)

Reefer container on board a container ship

5th generation container ships
Reefer capacity: 600-800 plugs per ship, including under deck stowage.
Reefer cargo: mode of transport

New “Hamburg Sud” - MONTE- class vessels (6)
Total reefer capacity 1,365 plugs = 27,000 pallets
Auxiliary power = 15,000 kW
Reefer container: plug capacity per carrier

- Maersk-Sealand: 15%
- MSC: 7%
- Evergreen: 6%
- PONL: 9%
- CMA-CGM: 6%
- APL: 4%
- Hanjin: 3%
- NYK: 4%
- COSCO: 4%
- CSAV: 4%
- CP: 3%
- Hsud: 5%
- Others: 30%

Source: Company info / BRS Alphaliner / MDS Databank
Conventional reefer operators

LauCool / NYK 18%
Seatrade, Netherlands +Belgium 21%
Others 61%
Reefer containers: operation

-25 dC to + 20 dC. (+/- 0,2 dC)

Cooling unit to maintain temperature, no cooling down!!
Reefer containers: features / risks ($)

• Greatest advantage: flexibility

• Owners / operators of reefer containers, very fragmented

• New buildings per year: approx. 100,000

• Equipment value
  new: 20’ approx. USD 16,000=
  40’ approx. USD 19,500=

• Cargo claim risk: 0,3%

• Financial risk in case of cooling failure restricted to 10 / 20 pallets
Reefer containers: features / risks

Cargo value: (40’reefer)

• < € 50.000,= : fruit, vegetables, plants

• € 50 - 100.000,= : frozen fish, frozen meat, cut flowers

• € 100 - 250.000,= : chilled meat, frozen shell fish, flower bulbs

• > € 250.000,= : temperature sensitive cargoes, viz. electronic equipment, photographic film, computer chips, printer cartridges, medical supplies etc.
Reefer vessel, features:

> Advantage:  • Fast (20-24 knots), direct calls
  • No cooling interruption
  • Cooling capacity

> Heavily leaning on large-volume trades (bananas/apples/citrus)

> Cargo value: up to € 4 - 7,000,000,= per ship / voyage

> New buildings (2004): 4 ships

> Scrapped (2004): 30 ships

> Newbuildings required before 2012: 440 ships

> Aged world fleet
Reefer fleet age structure

Total reefer fleet: 866 ships (2004)

- < 5 years
- 5-10 years
- 10-15 years
- 15-20 years
- 20-25 years
- > 25 years

Source: LR-Fairplay
Reefer cargo means of transport.

Market share development

- 1998
- 2005
- 2010

- Blue: Reefer containers
- Red: Conventional shipment
Reefer cargo, future trend - volume.

Global reefer cargo volume (million ton.), source: Drewry
Reefer transport, claims:

Containers, cause of claim(‘04):

- Delay transit: 24%
- Pre-shipment: 33%
- Stowage: 21%
- System failure: 18%
- Terminal problems: 4%

Conventional transport:

- Cargo shift
- Wet damage
- Fuel contamination

Source: BMT De Beer
Cargo shift, poor packaging / stowage
Corroded piping (brine)
Contamination / taint damage - fuel

Cracked tanktop
Examples: Inherent condition of cargo

Climacteric: fruit that ripens after harvest (=become sweeter)

Climacteric fruit
- peaches
- cherries
- nectarines
- pears
- bananas
- avocados

Non-climacteric fruit
- grapes
- citrus
- pineapples
- melons
Climacteric fruit (1)
Proper cooling cycle, bananas
Cooling failure, bananas

- Too long cooling down
- Premature ripening, heat generation, ethylene explosion.
Cooling failure bananas
Climacteric fruit (2)
Climacteric fruit (3)
Containers, cooling failure, mangoes
Loss prevention, vessel monitoring

- Crew education (Seagull)
- Weather routing
- Class
- P & I Clubs
- ISM (int/ext.)
- (Semi) governmental bodies
- PPECB / USDA / NZEB
- PTI
- PSC
- Fruit majors

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Loss prevention, reefer check

- Claim- and loss prevention survey (cargo worthiness items)
- Thermography: early detection of engine / equipment failures
Generators, condition analyses

Aux. engine

Electrical fuse
Infra red thermography

Temperature / valve check of brine line (-3,2 dC)

Kiwis
Loss prevention, new programmes

Specialised Reefer Ship Association (SRSA)

360 Quality Code:
- Harmonised reporting standard for terminals
- Internal and external ship auditing.
Consolidated manual on the transportation of perishable cargo in reefer containers
Thank you for your attention!