



WITH YOU ALWAYS

# Marine *Newslink*

December 2018



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## **FEATURE ARTICLE**

Milk

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## **PHOTO(S) OF THE MONTH**

Ships at sea

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## **BONUS ARTICLE**

Why do you need cargo insurance?

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## **BACK TO BASICS**

Question of the month

# MILK

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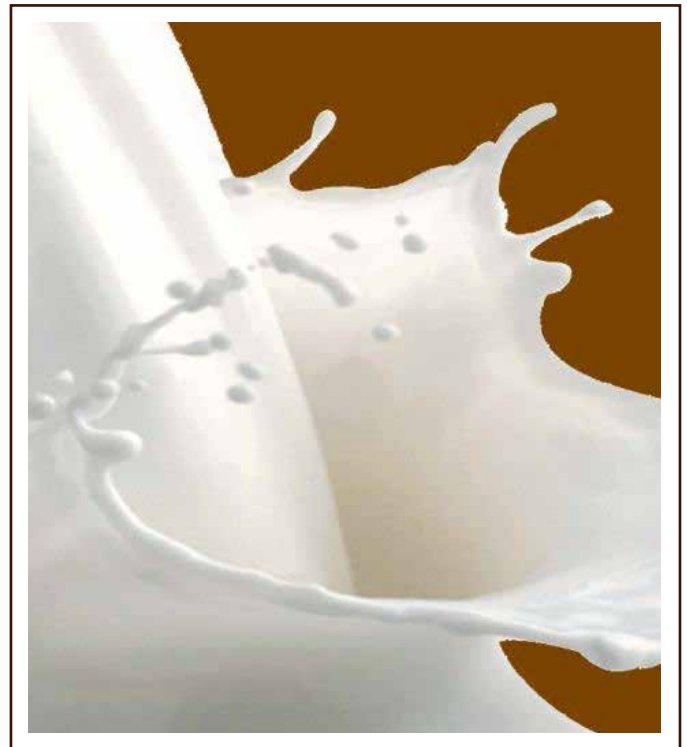
India's milk production tops the milk output of all the European Union countries combined. Indeed, the Asia-Pacific region has overtaken Europe as the world's largest milk producer, with India alone producing one in every five glasses of milk. India has been the world's top milk-producing country since 1997, but in the year 2014, for the first time, it beat the entire EU.

On a country basis, after India, the US produces the most milk and China comes in third. This represents a sustained growth in availability of milk and milk products for the growing population in India. Dairying has become an important source of income for millions of rural households engaged in agriculture. This increased consumption of dairy products are also playing a vital role in improving child nutrition and boosting the livelihoods of smallholder farmers across the region, as they are the source of production for the vast amount of milk and dairy products that we consume.

The First leg of milk journey begins from farmer's location to nearest collection center. On the most basic level, milk production in India tends to come from millions of individual farmers who may have one to two cows and produce five to ten liters of milk each day. They take that milk to a local collection center where milk is accumulated. From there, it is quickly transported to a chilling centers.



Milk and dairy products have a very limited shelf life. They are highly perishable food products and are dependent on a fail proof supply chain. What



makes it complex is the involvement of thousands of people in a country that is not just big but also very diverse. To feed a populous country like India, it needs robust mechanisms. Raw milk is stored in bulk coolers of varied capacities. These ideally range between 5000 and 15000 kiloliters. Care is taken to ensure that the milk does not lose its freshness. Milk is thus chilled to less than four-degrees. The intention is also to not let it spoil. It would not take much for the harsh external environment to spoil raw milk. Raw milk is subjected to qualitative tests such as FAT and SNF to ensure that it is unadulterated. The milk is then sent for further processing. To eliminate any chance of pilferage or adulteration during transit, organizations have introduced pilferage proof locking system as a standard mechanism in all milk tankers. At the dairy plant, the checks for milk include Urea, Hydrogen peroxide, detergent adulteration along with 18 other tests to rule out any adulteration in milk.

## **PACKAGING/HANDLING:**

Raw milk is majorly transported in bulk, in custom built insulated tankers but processed products need packaging. Processed milk is commonly transported in food-grade plastic pouches or tetra packages. There was a time when sealed glass



bottles were used but due to high possibility of breakage, these discontinued around 1990 in India. To ensure milk pouches are not damaged during transit, specially designed milk crates are used by dairy companies. These make it easy to stack the crates in cold storage as well as in a refrigerated truck container. The crates are manually loaded in either case. Dairy companies have made it mandatory that such vehicles have various facilities like Vehicle Tracking System (VTS) and GPS technology. Route optimization of each vehicle is done through SAP, which facilitates to reduce the transportation cost and achieve a faster turnaround time, in the process improving overall efficiency.

Processed dairy items are shipped in tins, inside cases, cartons and multiwall paper bags. Storage in a moist atmosphere may give rise to mold growth. Rancidity, caking and bacterial development may be indicative of exposure to air. Milk powder also absorbs moisture, and this may

give rise to these conditions.

Losses occur from bursting of containers solely by reason for their inability to hold the weight of the contents; for example, milk powder in 25 kg tins usually carries well, but when shipped in 50 kg tins, usually two tins to the case, handling in transit frequently causes the bursting of the tins, even though the cases are externally in good order and condition. Wetting of multiwall bags may reduce support for plastic lining and lead to subsequent loss by bursting. The highest standard of container cleanliness is required. International standards require multiwall paper bags with one or more polyethylene linings.





## TRANSPORTATION:

Close to 1,00,000 wholesale dealers are selling milk and milk products. The chain percolates down to another 10 lakh retailers pan-India. Laying higher emphasis on operational efficiency, many dairy companies are conducting driver training programs. New drivers are only inducted into chain or handed over a truck, once he has finished the requisite training. Training includes study and training in safe driving and hygiene. As the supply chain involves transportation of milk and dairy products, it is essential that hygiene is covered diligently.

A major dairy producer is also designing logistic matrix to match the demand versus production facilities at various dairy consuming locations, which would allow the dairy company to reduce the carbon footprint even as it operates a large fleet as part of its cold chain. A big outcome

expected is higher efficiency of logistics and reduction in costs.

## INSULATED Tankers:

A major milk processing unit can consume more than 2000 milk tankers that of capacity between 20-to-25 kiloliter per day. For swift and efficient collection of milk and across the vast landscape, so that it does not perish, a standard design of insulated tankers of SS 304 internal surface is used. By using such type of vehicles, transporters can maintain raw milk temperature in the range of four-degree to six-degree while in transit. This is sufficient to maintain milk quality as these tanker's travel within a diameter of 500 odd kilometers. Thus, over a period of 24 hours, the storage of milk in tankers is subjected to no more than a one or two-degree centigrade temperature fluctuation.

## NON-INSULATED Tankers:

Unlike the SS tankers that are used to transfer of raw milk, processed milk stored in packages apart from the other dairy products are also distributed. Due to high possibility of their tendency to perish and the distance such packages will travel until they are consumed, a robust mechanism is required to ensure timely delivery. Hence milk processing companies opt for outsourced vehicles. The commercial milk processors have strict set terms and conditions, which the transporters must abide. These terms and conditions are in line with the terms and conditions set by the relevant government authorities for the transportation of milk and dairy products in India. Their logistics structure is hence designed as four



# Dairy – process flow



cargo traffic distribution system. These are listed based on fresh products, ambient products, refrigerated products and frozen products.

For fresh products like pouch milk, buttermilk and curd, insulated trucks are used for distribution. These trucks transport the products from the dairy plants to the final retail outlet in less than six hours. Open trucks or containers are deployed to transport products like milk powders, flavoured milk, UHT cream and milk under ambient product distribution. Refrigerated vans transport products like butter, cheese, cheese spread and ice cream. These are fitted with data loggers to track temperature, which must be in the range of 0-4 degree throughout the journey. For ice cream and frozen products, the temperature must be maintained in the sub-zero range. For products requiring 0 to -18-degree, data loggers are a strict requirement. The supply chain for these products is accordingly designed to be swift and efficient. Pan-India distribution is always covered in full truck loads whereas a multi modal transportation mode is used for ambient products transported to

eastern and north eastern sectors.

## REEFER CONTAINERS:

Though raw milk may never be exported but dairy products are regularly shipped. Only food grade reefer containers should be used. Shipping lines should be informed about application of container when making request for such container. The container should be thoroughly checked for leakages, signs of infestation & strong odors. Container should be stuffed with cargoes requiring similar transportable temperatures & RH conditions. If palletized, then the pallet should be chosen as per destination country requirements. If cargo is boxed or bagged, it should not protrude out of limits of pallets & ideally should be shrink wrapped. When placing pallet over another pallet, it is prudent to place a 2-4 mm sheet of cardboard before placing pallet. This saves top cargo of lower pallet to get damaged from above pallet.

Improper ventilation can result in the paper bags attracting moisture. This causes mold, the smell of which can filter through the packing making its

contents unfit for consumption. Mold may also spring from the spillage of milk-powder (from torn bags) which attracts the moisture of the environment. Despite good packaging, taint from mold can penetrate the contents of undamaged bags. Mold can also develop on floors and structures when the relative humidity in the container is high. In cases of severe mold, it might lead to fumigation being required. Milk produces being "Odour-sensitive cargo", should in principle be bestowed by producers and only after careful consideration should it be joint packed with another commodity.

**TRAIN:**

Milk is also transported by rail wagons. The Horizontal Cylindrical Insulated Rail Milk tanker of 40,000 liters capacity is suitable for transportation of chilled milk at 4 degree Celsius. The inside barrel is made of stainless steel and allows carrying of dairy milk without any contamination. The outside barrel is insulated thereby making the tanker safe for carrying chilled milk at high speed even when attached to passenger trains. A 50-wagon rail rake can thus carry almost 2,00,000 liters of milk.

**AVOIDANCE:**

It is pertinent to avoid unwarranted agitation during transportation of raw milk. When milk is agitated, the milk fat is destabilized and becomes easily oxidized. The milk tanker should have proper

insulation. During transportation of milk to the dairies, the cold chain should be maintained for preventing deterioration. It is emphasized that milk must be cooled to a temperature below 5°C by using refrigerators or water coolers preferably within two hours after milking. The milk cans should be cooled by immersing them in clean, running water. High storage temperatures result in rapid microbial growth and hence causes faster milk spoilage.

Milk has the potential to cause several food borne infections of multiple etiologies. Raw milk is also known to be associated with pathogenic bacteria, which cause milk-borne diseases such as tuberculosis, brucellosis or typhoid fever, etc. Hygienic milk production, proper handling and storage of milk and appropriate heat treatment can reduce or eliminate pathogens in milk. Most consumers boil milk before consuming it, to protect themselves from milk-borne diseases. Processed milk must be handled hygienically to avoid post-processing contamination.

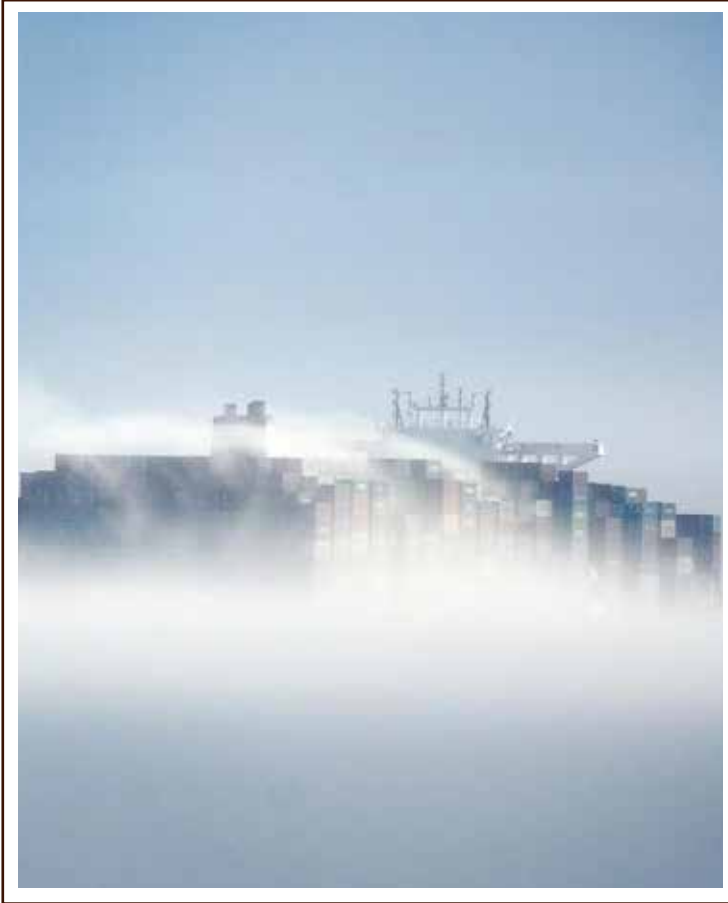
Hygienic milk handling includes using clean equipment, maintaining a sanitary milking environment, observing good personal hygiene, preserving the quality of milk during storage and transportation to the consumer or processing plant.





**PHOTO OF THE MONTH:**

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**WITH YOU ALWAYS**

**MARINE TEAM**  
WISHES YOU  
A VERY HAPPY &  
PROSPEROUS  
**NEW YEAR - 2019**



# BONUS ARTICLE: WHY DO YOU NEED CARGO INSURANCE?

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Cargo insurance reduces shippers' exposure to financial loss. Yet, so many shippers choose to risk importing and exporting goods without getting cargo insurance. Unfortunately, many shippers have suffered great loss for taking this risk.

Below are prime reasons, why shippers should get cargo insurance. Some of the reasons are dangers that can cause loss or damage to cargo, but the reasons go well beyond that.

### CARGO THEFT RISING

Cargo theft, especially through identity theft and fictitious pickups, is on the rise. We're not even counting piracy, which is a major risk of cargo theft and loss in modern international shipping.

### MORE CONTAINERS LOST AT SEA EVERY YEAR

Every year, containers are lost to sea. With the trend to megaships, carrying huge stacks of shipping containers across the oceans, cargo containers overboard have increased. Considering

the dramatic rise in shipping containers lost at sea is one more reason shippers should get cargo insurance. As per World Shipping Council, approximately 10,000 containers were lost at sea in 2017-18. This number does not even include containers lost during land transits.

### CATASTROPHIC EVENTS

Storms, shipwrecks, explosions. Every year, catastrophic events cause tremendous amounts of cargo losses.

### CARGO DAMAGE BY COMMON OCCURENCES

2017-2018: 25% of the damage is physical, 14% temperature related, 11% containers lost overboard, 9% theft and 8% shortage. Other claim areas are sinking, contamination, and infestation. All these claim types account for smaller percentages than 8%.

Damage to cargo happens all too often, probably because there are so many different opportunities for damage to occur.





Bad stowage and shore error are the largest contributors to damaged cargo, but they list many other reasons for damage:

- Lack of export packaging
- Increased use of weak retail packaging
- Inadequate ventilation
- Wrong choice of container
- Poor condition of container
- Lack of effective container interchange inspection
- Ineffective sealing arrangements
- Lack of clear carriage instructions
- Ineffective internal cleaning
- Contaminated floors (taint)
- Wrong temperature settings
- Condensation
- Overloading
- Poor distribution of cargo weight
- Wrong air flow settings
- Wrongly declared cargo
- B/L temperature notations misleading/unachievable
- Lack of reefer points
- Organized crime
- Heavy containers stowed on light
- Stack weights exceeded
- Heat sensitive cargoes stowed on/adjacent to heated bunker tanks or in direct sunlight
- Fragile cargoes stowed in areas of high motion
- Damaged, worn, mixed securing equipment
- Poor monitoring of temperatures
- Wrong use of temperature controls

#### GENERAL AVERAGE

General Average is an internationally accepted principle where if certain types of accidents occur to the vessel, all parties share in the loss equally. You do not want to find yourself in a General Average situation without insurance. A Claim's specialist website has recorded almost 185 GA incidents in year 2018. These do not include sunk or machinery & engine failure incidents.

#### CONTRACTUAL REQUIREMENT

Shippers' sales contracts may obligate them to provide ocean cargo insurance to protect a buyer's interest or their bank's interest. This is especially true when selling goods CIP or CIF. Shippers should always pay attention to the small details of their contracts. Unfortunately, insurance sometimes gets overlooked and the shipper can

be held responsible.

Failure to get cargo insurance when a shipper is contractually obligated to do so can not only subject the shipper to financial loss if there is loss or damage to the goods, but non-compliance with the terms of the contract with the buyer can lead to loss of sales and legal problems.

#### COVERAGE FOR LIMITED CARRIER LIABILITY

Carriers, by law, are not responsible for many common causes of loss that occur in transit (for example, acts of God, General Average, etc.). Even when carriers are liable, carriers' liability in the event of a loss is limited – either by contract in the bill of lading or by law. In most cases, shippers will only recover cents on the dollar from the carrier. Shippers should never count on the carrier that is shipping their goods to cover losses or damage that may occur over the course of a container ship voyage.

Shippers who purchase cargo insurance themselves are usually much better protected than shippers who allow other parties in their importing or exporting transactions to handle the cargo insurance.



## BACK TO BASICS

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**QUESTION OF THE MONTH:** (Please submit your answers to [vijaypal.singh@tataaig.com](mailto:vijaypal.singh@tataaig.com) & [Shioram.Balachandran@tataaig.com](mailto:Shioram.Balachandran@tataaig.com) by 25<sup>th</sup> of each month)

Insured had covered import consignment of used machinery from UK to India. It was FCL and INCO term was C & F Mumbai Port. Since it was 2<sup>nd</sup> hand machinery, coverage given was ICC-B + War + Strikes. In high seas due to heavy weather few containers fell off due to rolling of ship. One was our insured's container. Is the claim payable?

### LAST MONTH'S QUESTION:

A machinery was purchased on ex-works basis from Ahmedabad to Nagpur. The buyer had covered the same for all risk + SRCC. The consignment reached the insured's factory. Since the site (where the machinery was to be erected) was not ready and it was an ODC (over dimensional cargo) & OWC (over weight cargo), they requested the transporter to wait for a week and the truck was parked inside the factory compound.

The truck and cargo were completely gutted in a fire on the 6th day night. Is the claim payable?

### LAST MONTH'S ANSWER:

No. The cargo was no more "in the ordinary course of transit" and hence not admissible. The time limit of 7 days allowed under ITC-A is applicable so long as the goods are in the ordinary course of transit and without the interference of the insured.

### CORRECT ANSWERS SENT BY: (In order of replies received)

Rajit Sethi - Independent, Punjab

Hema Raghav - Optima Insurance Brokers Pvt. Ltd., New Delhi

E. David Theodore Joseph - Paavana Insurance Brokers Pvt. Ltd., Chennai

Tapan Shah - Perfect Insurance Solution, Ahmedabad

Kritika Singh - Ideal Insurance Brokers Pvt. Ltd., Gurgaon

Pramesh Parikh - Anandrathi Insurance Brokers, Hyderabad

Rohan Lodaya - Insurance World, Vadodra

V Ganesan - Marsh India Insurance Brokers Pvt. Ltd., Chennai

Arun P. Pai - TT Insurance Broking Services Pvt. Ltd., Chennai

Nishi Priya - Optima Insurance Brokers Pvt. Ltd., New Delhi

Bharat Bhushan - Optima Insurance Brokers Pvt. Ltd., New Delhi

### TATA-AIG

Jignesh Bhagatwala - Broker Relations, Surat

**PLEASE SEND YOUR REPLIES/ANSWERS TO ADDRESSES  
GIVEN ON LAST PAGE OF THE MARINE NEWSLINK**

**IF YOU HAVE ANY COMMENTS / FEEDBACK PLEASE SEND IT TO**

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