



WITH YOU ALWAYS

Marine *Newslink*

September 2019



FEATURE ARTICLE

Firecrackers

PHOTO(S) OF THE MONTH

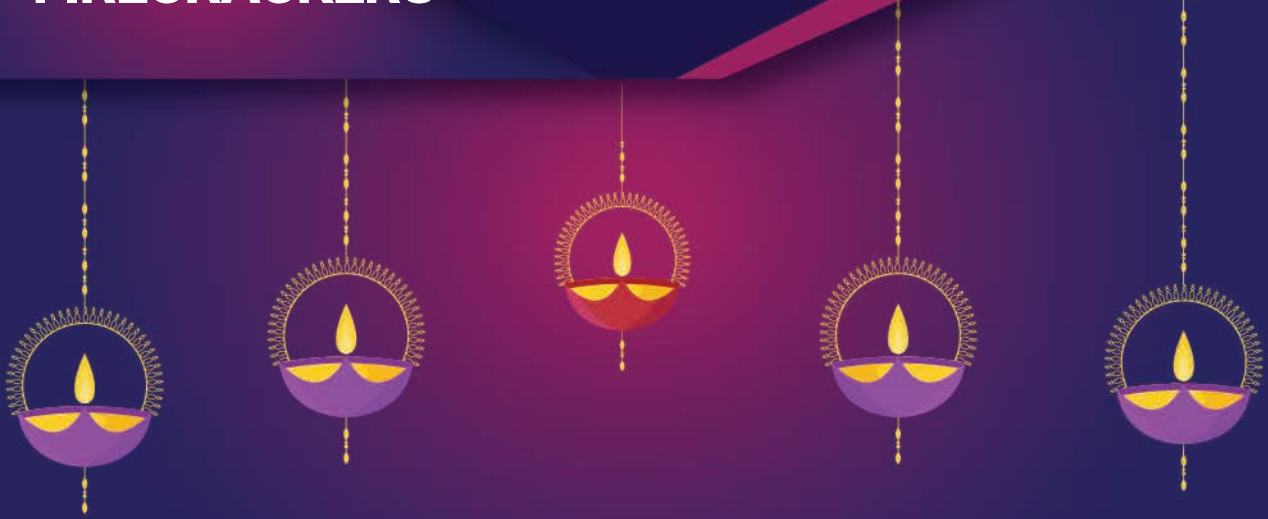
Festival Of Lights

BACK TO BASICS

QOTM



FIRECRACKERS



India's biggest festival, Diwali is around the corner and so is the season of firecrackers. Firecrackers in India have been associated with culture, tradition and celebration since ages.

Firecracker is a small explosive device primarily designed to produce a large amount of noise, especially in the form of a loud bang; any visual effect is incidental to this goal. They have fuses and are wrapped in a heavy paper casing to contain the explosive compound. Firecrackers, along with fireworks, originated in China.

The use of fireworks in the celebrations of Diwali, which is so common in India now, came into existence, when gunpowder

arrived to India. Fireworks, like its primary ingredient Gunpowder, has a long history in India. Gunpowder - the accidental tenth or eleventh century invention of medieval Chinese alchemists - was early on dubbed as "devil's distillate", as it terrified and fascinated onlookers with its flash and bang. As its military use evolved in China, so did its show and gimmick value - right from the white, magical appearing smoke left in the wake of its open combustion.

One historical conjecture is that the gunpowder technology, along with the first pyrotechnical mixtures for entertainment, was brought to India and Europe from China by the Arabs.





Today, Tamil Nadu is the hub of firecrackers, but it started in Kolkata. In the early 1900s, driven out of Sivakasi by its draught and famine, two brothers -Shanmuga Nadar and P. Ayya Nadar - came to work at safety matches factory of one Mr. Dasgupta at Kolkata. After learning the functions of safety matches factory, the brothers decided to set up their own enterprise in Sivakasi. They started with ordinary, coloured & star safety matches & sparklers and then used the dry weather to their advantage as it was the ideal weather for firecracker production. Since then, Sivakasi in Tamil Nadu became the hub of firecrackers.

INDIA DOES NOT EXPORT FIRECRACKERS BUT DOES EXPORTS CERTAIN FIREWORKS

The difference between firework and firecracker is that firework is a device using gunpowder and other chemicals which, when lit, emits a combination of coloured flames, sparks, whistles or bangs and sometimes made to rocket high into the sky before exploding, used for entertainment or celebration while firecracker is a firework consisting of a string of bangers linked by a fuse designed to emit a series of loud bangs when lit traditionally used in festivals. Firecrackers are "believed" to scare off ghosts and bad spirits and to bring good luck.

Colours	Metals Used
White	Magnesium, Aluminium Titanium
Red	Strontium
Orange	Calcium
Yellow	Sodium
Green	Barium
Blue	Copper
Purple	Strontium, Calcium

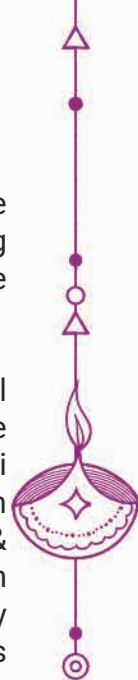
Being one of the largest firecracker manufacturers in the world, it gives India great potential to turn this commodity into foreign revenue, but the problem is inadequate storage


standards and shipping. Most of the countries have strict guidelines for importing firecrackers, which India is presently unable to comply.

Firecracker industry has witnessed several tragic accidents due to lack of proper storage facilities and guidelines. Since, Sivakasi holds 85% of manufacturing of firecrackers in the country, Fireworks Research & Development Centre (FRDC) has been established to set quality and safety standards for the entire industry. FRDC is responsible of testing the raw materials, monitoring the hazardous manufacturing process, storage and safety of the personnel, among others.



Until the mid-1980s, firecracker production was low-tech. They were handmade, beginning with rolling tubes. Once the firecracker tubes were rolled by hand (commonly from waste newspaper) and then filled with powder, their ends were crimped,





and fuses inserted, all by hand. Today some of the work has been delegated to machines. However, automation has not been accepted by labourers as they fear of losing their jobs. The biggest manufacturers have only been able to automate their chemical mixing processes, but manufacturing still remains a manual job.

SAFETY

It took the Petroleum and Explosives Safety Organisation (PESO), the licensing arm of the government that authorises manufacturers to produce fireworks, three years to come up with guidelines for just four categories.

These guidelines mandated that the sulphur content must not exceed 20%, nitrates must not exceed 57% and aluminium powder content 23%. The guidelines failed to mention heavy metals such as cobalt, copper and magnesium which are used as colouring and regulating agents in many forms of fireworks and glitter which is used in sparklers. Exposure to these substances is lethal to human health.

Since 2008, PESO has not released any new guidelines, allowing firecracker manufactures unregulated use of chemicals and heavy metals. Guidelines issued by other government agencies and existing laws have also failed to curb dangerous practices in the production, sale transport and use of firecrackers.

Packaging & Transportation of firecrackers is still an unorganised sector in India.

PACKAGING

Packaging remains & will remain a challenge for this product. The general perception is that the outer packaging, nevertheless will be discarded and hence manufacturers do not wish to incur cost on special or safe packaging. If India had export market for firecrackers then there were possibilities of better packaging standards, as these would

have been defined by the importing country, but with almost nil exports there are no proper standards for packaging.

These finished firecrackers are sold in packs which come in many sizes; from the very small, containing as few as four to six firecrackers to the most common size packs, containing 16 and 20 crackers per pack. Larger packs contain anything from 30 to 120 firecrackers to huge "belts" and "rolls", strings of several hundred to several thousand crackers. Celebratory rolls can be as large as 16,000 firecrackers. Firecracker packages are wrapped in colourful and translucent glassine paper, as well as clear cellophane, with glassine being the most popular.



The final operation involved applying a branded label on each pack, then bundling finished packs into wholesale lots called "bricks" which contained an average of 80



packs each (varying according to the size of the packs being bundled; for example, packs of 32 crackers might have 40 packs per brick, compared to packs of 16 or 20 with 80 packs per brick).

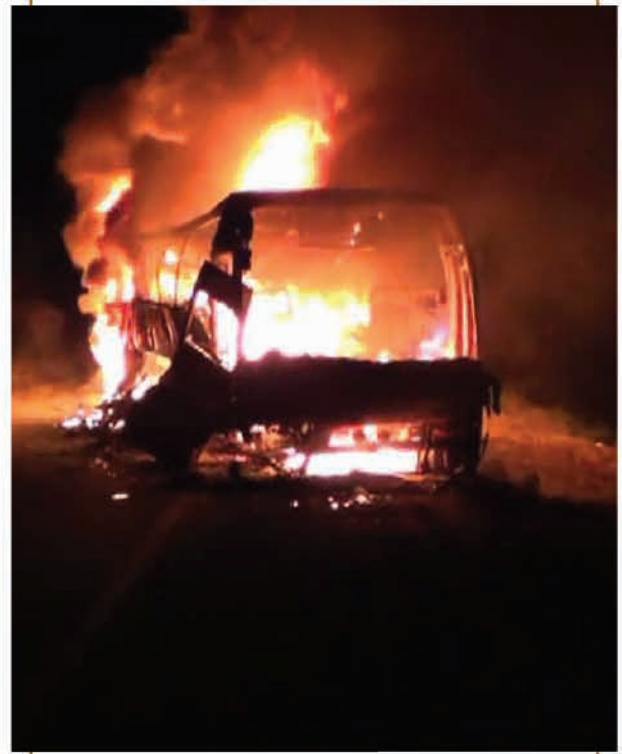
PESO has no proper guidelines on packaging, though it loosely defines that packaging & labelling norms need to be adhered to strictly to identify the real cost of fireworks to the environment. Hence cheapest quality of packaging is used in firecrackers. Single ply boxes with garish painted labels, whose inks can also be source of ignition or fumes. In almost 80% shipments the firecrackers are bundled or even bagged loosely. A poorly made cracker can spill its explosive ingredients, which can now very easily catch spark or fire, even from hot truck bed.

TRANSPORTATION BY ROAD

Fireworks are a lot of fun, and they are easy to purchase in most jurisdictions. Consequently, it can be easy to forget that they are hazardous materials. Fireworks are hazardous materials and require utmost care when transporting them to avoid any emergency.

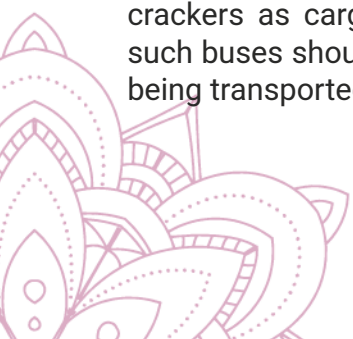
While consignments moved by trucks from end to end, as per specifications may not create any trouble, carrying crackers in small quantities by trains, buses and in commercial vehicles like omni buses may result in unexpected consequences.

Shipping of fire crackers on public transport vehicles such as the buses and autorickshaws is a safety hazard and is not permissible as per the rules. However, during festive season, it is not uncommon to find private buses, especially long-distance services, moving sizeable quantity of fire crackers as cargo. Passengers travelling in such buses should report about fire crackers being transported in the vehicle.



Although one doesn't need any sort of special permit or documentation to transport consumer fireworks in private vehicle, it is important to remember that safe fireworks handling begins with the moment of purchase.

- Ensure to never keep fireworks in the passenger compartment of a car, truck or any vehicle. A disaster could ensue if even one goes off by mistake - friction or cigarette ember or vehicle accident could ignition. Always store fireworks in the trunk of the car or in the bed of a truck to ensure the greatest level of safety.
- Packing fireworks in a container that is resistant to sparks, such as a sturdy cardboard box. Fireworks that are purchased as a set (as opposed to piece by piece) are typically packaged in a spark-free box.
- Ensure to pack loose firecrackers in plastic bags before placing them in cardboard boxes.
- Ensure that fireworks are out of direct sunlight. When storing fireworks in the back



of a truck, keep them in a larger box or cover with a spark-free tarp.

- Never smoke around fireworks or toss a cigarette butt out of your car. It could land in the trunk or truck bed and ignite the pyrotechnic items.
- Never leave the car, parked in open sunlight with firecrackers in trunk & never ever in cabin.



TRANSPORTATION BY TRUCK

- Truck driver must be informed & warned that no cooking should be done inside the truck cabin or anywhere near the truck. Strictly no smoking while driving or near the truck, when stopped.
- Truck driver must ensure that exhaust or any heating element is away from loaded firecrackers. Any sparks emitting from exhaust can also cause an incident.

- Truck driver must not park the truck near flammable atmosphere like pitstop kitchens (Dhabas) or Fuel pumps.
- Truck driver should first inform nearest fire brigade, before informing the police.
- Trucks should be equipped with fire-extinguishers but their use must be duly explained & trained to drivers.



TRANSPORTATION BY RAIL

Fireworks, in any form are not permitted to be transported in passenger trains. Police views it seriously and action as per the Indian Railway Act could be initiated against erring passengers. Those interested in booking consignments should approach the railway authorities and after adhering to the norms, they may transport it.



TRANSPORTATION BY SEA

Recommendations cover both stuffing fireworks in maritime containers and container loading and stowing on the container ship.

- Fireworks are classified under IMDG regulations of transportation of Dangerous Goods.
- Limit the quantities to limit the effects in the event of accident as any incident can get aggravated very easily due to explosive nature of cargo.
- Select an adequate packaging to avoid moving material goods during stowage.
- Use correct/suitable containers, presumably with fire walls able to contain a fireworks fire. Though, there are no such containers that are in current use for maritime transportation, this type of fire resistant container is however

in use for the storage of dangerous goods. An insulated container may help.

- Define a safe position for stowage of fireworks containers on ship so that fireworks containers are stowed on the deck and far from accommodation areas and enclosed as far as possible with empty containers to limit the spread of the thermal effect. Another possibility is the stowage below deck inside the first dock, if equipped with a rapid flooding system and fire detectors (inside containers as well as container hold).

TRANSPORTATION BY AIR

Federal law prohibits fireworks from being transported on aircraft, either as carry-on items or in your checked baggage. If you plan to travel for a fireworks holiday, either take your car or plan to buy fireworks when you arrive at your destination.



HAPPY DIWALI



Diwali Safety Tips



Keep the fireworks
in a closed box



Keep a bucket full
of water handy



Wear footwear while
lighting fireworks



Make sure there is
first aid kit at home



Do not bring
pets outside



BACK TO BASICS

QUESTION OF THE MONTH: (Please submit your replies by 25th of each month)

Shipment of Insured's transformers on CFR INCOTERMS was aboard a vessel owned by a German ship owner, destined for Nhava Sheva Port in India.

The vessel encountered General Average situation in Persian Gulf and was brought to port of refuge, Jebel Ali. Major activities were required to make the vessel sea worthy for future maritime adventures. The German shipowner, due to lack of financial strength, filed for bankruptcy in the German court. This resulted in termination of all contracts of carriage at the port of refuge, Jebel Ali; because servicing the BLs to final port of call requires adequate funding by ship owners.

Since the transformers were important and critical items for the Importer (Assured under the Marine Cargo policy), they requested the Insurer to cover the additional freight they were going to incur to bring the cargo to the final destination port as mentioned in the original BL. The coverage under Assured's policy was ICC(A).

Is the additional freight incurred by the assured to bring the cargo to intended destination is indemnifiable under the policy or not?
Please do cite the relevant clauses.

LAST MONTH'S QUESTION:

India is major importer of various grades of Coal. How many different grades are imported by India?

LAST MONTH'S ANSWER:

TYPES OF COAL

Anthracite: The highest rank of coal.

Bituminous: Bituminous coal is a middle rank coal. Bituminous usually has a high heating value. Subbituminous: Subbituminous has a higher heating value than lignite.

Lignite: Lignite coal, aka brown coal, is the lowest grade coal with the least concentration of carbon.

For GRADES of COAL, please visit : <https://www.coal.nic.in/content/coal-grades>

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

SJayesh Nair - Optima Insurance Brokers Pvt Ltd., New Delhi

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

Vijayanand V. - Mahindra Insurance Brokers Ltd., Chennai

**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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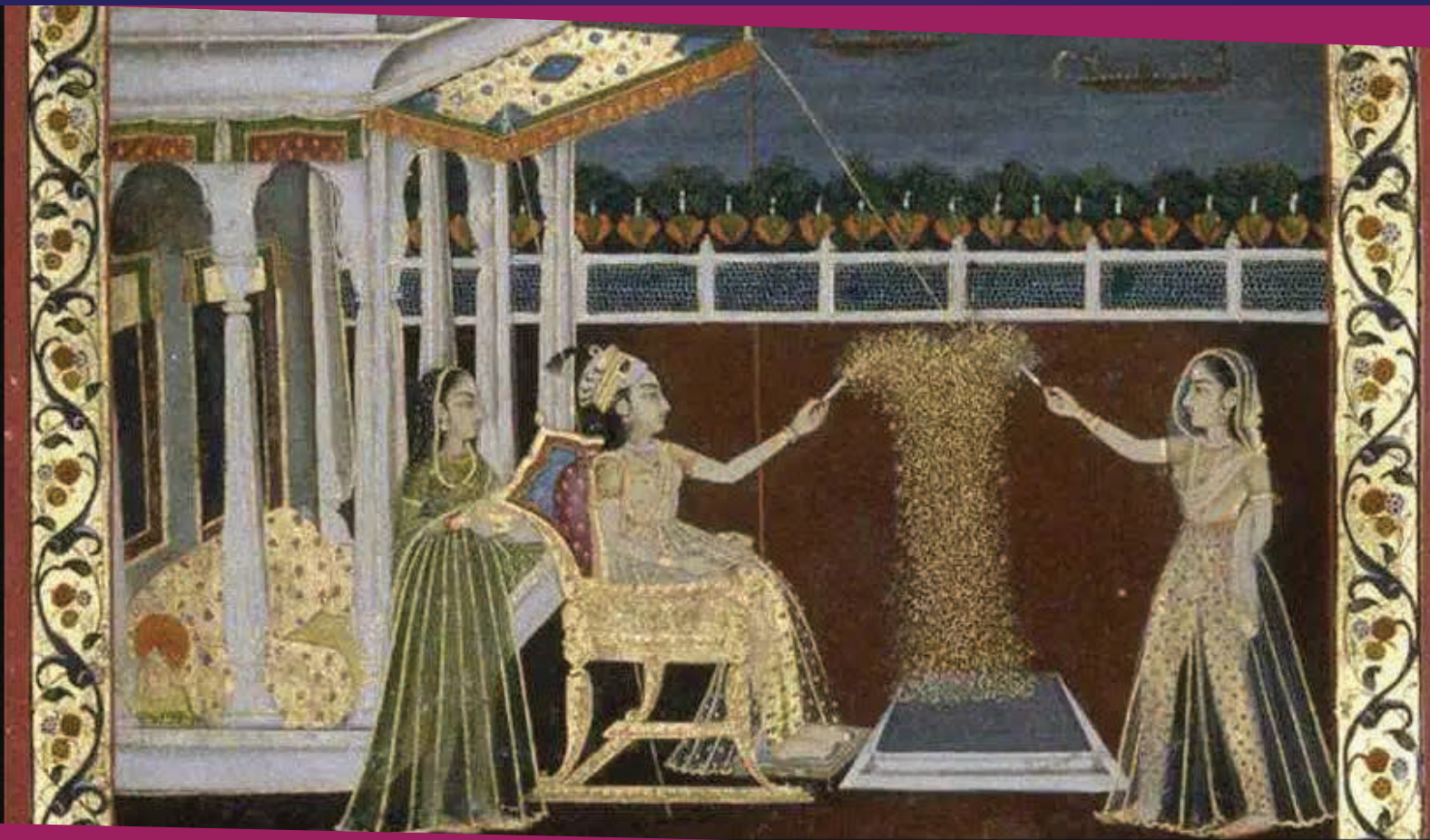
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