

# Scrap Metal Cargoes

In the past few years, we have noticed an increase in claims caused by fires in scrap metal cargoes. The consequences of these fires can be disastrous, reason why we are publishing an updated version of our circular of 8 August 2019 about the underestimated risk of scrap metal cargoes. In this circular, MSIG Europe highlights some of the dangers and risks associated with loading and transporting scrap metal cargoes, and provides recommendations on improving safety.

## **Scrap Metal Cargoes**

In principle, scrap metal consists of recyclable materials left over from product manufacturing and consumption, such as vehicle parts and surplus materials. There are two main categories of scrap metal:

1. Mixed scrap, which comes in different sizes. It may contain car body parts or shredded pieces of metal the size of coins.
2. Ferrous metal borings, shavings, turnings or cuttings formed by drilling, turning or cutting steel.

Turnings can be long and form a tangled mass, or be cut in shorter pieces.

Borings are produced during the manufacture of iron castings. They tend to be finer and have a greater bulk density than turnings.



## Risks

Transporting scrap metal cargoes can be a lucrative business due to the value of the cargo. However, it is also dangerous as hazardous materials may be present in the cargo. Hazardous materials can ignite or explode at any time, causing damage to the vessel and environmental damage, as well as personal injury or even death.

The commonest risks of handling and transporting scrap metal cargo:

### 1. Spontaneous combustion

Iron can oxidise rapidly, which releases heat. In large compact quantities of scrap, this heat will be largely retained and the temperature of the mass will rise. There are known cases where the temperature has reached an incredible 500 °C just a few metres below the surface of the cargo without producing flames.

### 2. Fire

Cargoes of mixed scrap may be contaminated with paper, car tyres, rags and all kinds of flammable material. If seawater and salt crystals are present in the cargo hold, this can lead to rapid oxidation. The result is a rise in temperature and the contaminants catching fire.

Given how common lithium batteries are these days, there is an increased risk that scrap metal contains these batteries or parts of them. Lithium batteries in the cargo increase the fire hazard. Broken, cracked or crushed battery cases allow moisture and oxygen to enter the battery cells and oxidise the lithium components, causing a heat reaction. Ultimately, this can lead to fires or explosions.

Moreover, lithium battery fires can release irritating vapours and toxic fumes, and the fires are difficult to put out. In fact, the only effective way of extinguishing fires caused by lithium batteries is 'total flooding'.

### 3. Damage to the cargo hold during loading

Scrap metal consists of heavy pieces which can easily penetrate the tank top and the sides of the cargo hold. This may cause leaks in ballast and fuel tanks, which can be difficult to detect when the cargo holds are full.

Pieces of scrap can also fall from the grab or magnet during loading and damage decks, railings and hatch coamings.

## Contractual Considerations

In accordance with most standard charter parties, the charterer is responsible for loading and discharging of the cargo under the supervision of the master. During loading, however, the parties may not notice damage to the vessel caused by the scrap metal cargo as the holds are full. To protect both the owner and charterer in case of damage to the vessel's holds, special rider clauses can be inserted in the charter party.

In 1998, BIMCO published the "BIMCO Scrap Metal Clause 1998". This clause states that cargo must be loaded in accordance with Annex 9 of the IMO Code of Safe Practice for Cargo Stowage and Securing. If a charterer does not comply with these provisions, the costs of damage caused to the vessel shall be for the charterer's account.

Another commonly used clause is a "soft landing clause", stating that the first layer of scrap must be dropped from the crane as close to the tank top as possible to form a 'cushion'. Compliance with this clause minimises damage to a vessel's cargo holds.

However, the contractual position always depends on the negotiating position of the parties and all other terms of the charter party.



## Recommendations

MSIG Europe recommends appointing the professional services of a qualified cargo surveying company to assist the Master prior and during loading. Furthermore, the following precautionary measures should be taken:

- As with any other cargo, the cargo spaces must be prepared as per general loading practice.
- Loading must be performed in accordance with the International Maritime Solid Bulk Cargoes Code (IMSBC Code).
- The shipper must declare in writing that the scrap metal cargo does not include borings, shavings, turnings or cuttings that encourage self-heating.
- Do not load items containing pressurised gases, oil or fuel (engines), bombs, radioactive material or inflammable material (such as timber or rubber tyres). Lithium batteries must be immediately isolated from the scrap metal cargo.
- Temperatures must be checked regularly. If the temperature is higher than 55 °C, the cargo must not be loaded. If the temperature rises to 80 °C during the voyage, it poses a potential fire risk and the vessel must immediately proceed to the nearest port.
- If the crew has to enter the cargo hold, special breathing apparatus must be used, as oxygen levels may be low with a risk of suffocation.
- Do not pump bilge wells unless absolutely necessary; a certain amount of dirt and oil can be expected, which can result in an oil pollution claim.
- Amend charter parties accordingly by inserting special clauses which allocate liabilities between the parties in a clear and unambiguous way. When sub-chartering, make sure that such clauses are contracted back-to-back with the sub-charterer.



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