

# Lessons Learn



## What happened?

Nov 2019

Time: May 25, 2019

Subject: Choking, carbon dioxide

Location: Weihai Rongcheng

On May 25, during the maintenance period of the Fujian Jinhai Shipping Group Co., Ltd. "Jinhaixiang" shipyard in the Rongcheng City, Shandong, Xixiakou Ship Repairing Co., Ltd., the ship's carbon dioxide fire extinguishing system released a large amount of carbon dioxide gas into the engine room. Ten people died of asphyxiation, 19 were injured, and a direct economic loss of 19.03 million yuan.



图1 气瓶铭牌（采自气瓶间）



图2 瓶头阀（采自气瓶间）



图3 增压阀（采自气瓶间）



图4 增压阀连接气动管路局部

## What have we learned from this?

The investigation found that the direct cause of the accident was that Li Hongzhen, the third deputy of the "Jin Haixiang" freighter, operated in violation of regulations; the maintenance personnel of Nantong Seagull Lifesaving Protective Equipment Co., Ltd. removed carbon dioxide when the inspection process of the marine fixed carbon dioxide fire extinguishing system was not completed. The cylinders were connected to the main pipeline, causing 84 cylinders of carbon dioxide gas to be released into the cabin, causing poisoning and suffocation. Improper pre-treatment after the incident rescued the chaos on

## What steps should we take?

- The college should develop management systems and operating procedures for gas cylinders and laboratory gas pipelines;
- Separate gas cylinders storing inert gas or other asphyxiating gas should be installed with oxygen content detectors and emergency exhaust devices. The oxygen content detectors are interlocked with the emergency exhaust devices.
- An emergency shut-off valve is installed near the gas cylinder of the gas pipeline. The shut-off valve can be linked with the gas detector.
- Routinely strengthen the safety inspection of gas

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the scene and enlarged the poisoned asphyxiated death and injured people.

- Carbon dioxide is a suffocating gas, heavier than air, and when released in a confined or confined space, it can cause a decrease in the oxygen content of that space.
- Persons can suffocate in hypoxic environments.
- During the emergency rescue process, rescuers should rescue themselves while ensuring their own safety.

cylinders and gas pipelines, especially for leaks at the junctions between pipelines and between pipelines and cylinders.

- Cylinder rooms, cylinder cabinets, and pipeline wells for laying gas pipelines should have corresponding risk warning signs.
- Gas leaks should be incorporated into the College's emergency management procedures. The college shall formulate corresponding emergency measures, equip relevant emergency equipment, and strengthen the training of emergency personnel.

***Nothing we do is worth getting hurt for !***