

DECEMBER 2023

ARTICLE RELATED TO MARINE FIELD

Since 2023

# PENDULUM

*"To Infinity and Beyond!"*

## WAR-ZONE EXPERIENCE:

An untold story Conclusion

Iran-IRAQ war (1980-90)

by Radio Officer G.Mohandas

## MANNED SHIPS ERA

Artificial intelligence controlled

ships era (iota-2)

by Ch.Er.Abdul Rasheed



Monthly Edition from Pondicherry Maritime Academy

*Vol - 4 | Issue - 4 | Digital Edition | Article*

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## Editorial Board



## Message from Chief of Editor

**Mrs. Arul Josphin Mary | Director of PMA  
Chief of Editor**

On behalf of our editorial team, I would like to offer a word of thanks to our reader, data contributors, marine authors, editors and anonymous reviewers, all of whom have volunteered to contribute to the success of the magazine and for its mission towards in the maritime education and research. Without research, education system cannot be fulfilled to meet the industry requirements **IMO's** dream about **GREEN VOYAGE 2050** and government of the India dream about **MARITIME INDIA VISION 2030**, we encourage contribution to ensure continuity of a successful maritime magazine We also welcome comments, suggestion that could improve the quality of the magazine Thank you, we trust and hope will find the magazine more informative in the future / ahead endeavor.

## Editorial board Members



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**Mr. G. Mohandass**  
**SECTION EDITOR**

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5. Cyber Security In The Maritime Industry
6. Innovation and technology in maritime search

# Know Your Law



*Ch. Er. Abdul Rasheed*



## WHAT ARE THE BOUNDARIES OF INDIA IN RELATION TO MARITIME LAW??

The aforesaid question is important to the country not only for the protection of its individual integrity as a sovereign state and for protection and security from external threat but also for the purpose of framing its fiscal policies for merchant navy trade and commerce and exploration of seas.

1. The Indian water position on its boundaries at sea with the mandate of International Law specifically the United Nations Convention on the Law of Sea, 1982 (UNCLOS 1982).
2. The Territorial Water, Continental Shelf, Exclusive Economic Zone and other Maritimes Zones Act, 1976.



# Gas Pipeline Explodes Onboard

## 1 Die, 3 Sustain Injuries as Gas Pipeline Explodes Onboard Oil Tanker Berthed at Chennai Port

One worker died, and three sustained injuries when a massive fire broke out on an oil product tanker berthed at the Port of Chennai in India, the police said.

The accident occurred when the crew members were trying to carry out repair work. A gas pipeline burst onboard the vessel, and the victims were immediately taken to the hospital.

The workers used a gas cutter to remove a bolt and carry out repairs near the engine. As per news agency PTI, the sparks from the gas cutter fell on the pipeline, causing the fire.

SagayaThangaraj, engaged in repair work, died on the spot while three others, Joswa, Pushpalingam and Rajesh, who accompanied him, were badly injured, as per police report.

They were saved and taken to the city's Kilpak Government Medical College Hospital and are receiving intensive care treatment. The Chennai Port Police is conducting a thorough investigation of the accident.

The accident occurred on the **MT Patriot**, an Odisha-based oil tanker that came to Chennai for repair at the Coastal Work Place, Chennai Port Complex, on October 31st.



*Capt. Ralph D' Souza*

## FUN FACTS

*Bet you didn't know.....*

The original name for the search engine Google was Backrub. It was renamed Google after the googol, which is the number one followed by 100 zeros.

Source: The Hindu, News9live

# January Month Birthday



**Capt. Suresh**

04-Jan



**Mr. Sambath**

05-Jan



**Capt. Venkat**

20-Jan



**Mr. Mohanlingam**

30-Jan



**Mr. Balu**

24-Jan

*"Cheers to more fun, more memories, and more cake!"*

# Flourish OR Perish - V4

Continuing the free radical story, Free Radicals damage Telomers, the protective end cap of the Chromosome/ DNA (twisted ladder) molecules.

This causes early disintegration of the tips of the Chromosome/DNA (twisted ladder) molecules, causing early aging and advancing early, the age related diseases. Hence we take antioxidants, to neutralize free radicals. So free radical is a killer and be feared, correct



It is a killer, but a welcome killer, if in small quantities. Free radical assist aging cells to die quickly, through a process called apoptosis. Aging cells are given early(quick) retirement and put to death, to be recycled into fresh young cells, keeping body healthy & vibrant. The dead cells are recycled through a process 'autophagy', to create the new cells.

Aging cells, ie the Senescent cells are old or run-down cells that have reached the end of their lives or suffered irreversible damage. They ought to die and yet they don't, instead lurking in tissue, causing trouble.

Senescent cells are normally cleared out through Apoptosis, together by the immune system and free radicals working together. However, the immune system goes weak during ageing and Senescents accumulate, dripping poison into their surroundings and turning other cells rogue. They are a leading cause of numerous age-related conditions, not just in the knees but also in the heart, liver, muscles and brain.



*Ch. Er. Pradeep Kumar m.s.*

Now we have Free Radicals, Apoptosis & Autophagy before us.

Whereas free radicals are generated mostly as a by-product of glucose metabolism, causing Apoptosis, autophagy is triggered by fasting combined with some amounts of protein restriction.

So when does free radicals become a destructive killer, from being a benevolent agent of apoptosis

When there is Far Too Much free radicals, flooded in the blood. That is, when there is too much glucose metabolism. Like having a bucket of radicals when all that needed is a teaspoon full.

That is,

when most of the energy demand of the body is met from carbohydrates. Ideally most of the energy supply to the body must come from fat, and only rest from carbohydrates.

Now, wouldn't protein restriction in conjunction with fasting, cause muscle mass loss

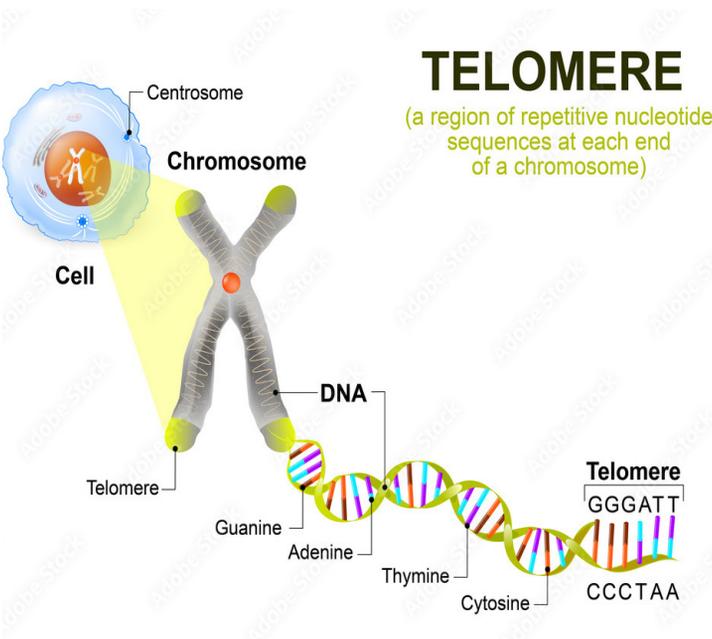
Yes it will, after the protein restriction goes beyond a point.

Thus, here, we have a delicate balance to be met, to maximize benefit from autophagy.

So far we have talked only about diet and it's influence on free radicals, apoptosis and autophagy. We have to combine it with exercise, especially resistance training. Especially when we are on food/protein restriction.

To prevent muscle mass loss, Body building exercises (resistance training) are essential when we are fasting, alongwith restricting proteins.

Hope the story is complete and clear.



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3	PSFC	07,14,21,28	04,11,18
4	PSSR	11,26	08,22
5	EFA	07,21	04,18

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4	MEDICARE	19	09
5	SSO	04,18	08,22
5	CRISIS	12,26	08,22

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		DEC 2023	JAN 2024
1	VICT	12	09

Simulator Course			
		DEC 2023	JAN 2024
1	ECDIS	12	02

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		DEC 2023	JAN 2024
1	R-AFF	04,11,18,26	02,08,16,22,29
2	R-PSCRB	05,12,19,27	03,09,17,23,30
3	R-MFA	06,20,27	04,10,18,24,31
4	R-MEDICARE	02,16,30	03,17,31
5	RUTC(ENG)	06,13,20,27	03,10,17,31
6	RUT(DECK)	04,18	08,22
6	R-FPFF	05,12,19,26	02,09,16,23,30
6	R-PST	06,13,20,27	03,10,17,24,31

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# War-Zone experience: An untold story - (Conclusion)

After 40 days of port stay, our ship has completed discharging her cargo, like many other ships including Iran Rizvan. Pilot boarded our vessel and had informed us that there are 11 ships to sail out that day in a convoy escorted by Naval ships. All the 11 ships were pulled out from berth and formed the line up one behind the other, our ship was the last ship to unberth and prior joining the convoy, the pilot received orders from port office to drop anchor and attend another urgent assignment.

We were anchored in inner anchorage and other 10 ships sailed as planned. Sun set. We heard bombing sound and we could visualize the sky which was lit up in the same direction of buoy no.10. We were sceptical of any ship from that convoy might have been hit.

Next day morning, around 8 o'clock, as I was strolling on deck, I spotted a naval boat carrying many life jacket donned persons on her deck. As the boat came close by, they altered the course towards our ship and an Iranian Naval sailor announced through a loud hailer that Iran Rizvan was bombed and sank near buoy No.10 and no casualty. As soon as he finished his announcement the Iran Rizvan RO stood out from the crowd, waving his hands, and yelling towards me, "Sparky, I told you that our ship will be bombed at No.10 buoy" I just waved back and didn't know how to react. I was dumb founded.

I rushed back to dining hall and joined rest of the Officers who were leisurely having their breakfast. All were talking about Iran Rizvan and those friends who hosted the very first get-together for the fellow Indian Officers. The ship vanished. How sad, the repeated affirmations of RO became TRUE.

I could see tears dripping down from couple of our officers' eyes. I was wondering whether these tears meant for the tragedy or the situation right now we are in, since very soon we must cross the very same buoy in a matter of days.

After spending few days in the inner anchorage, we joined a convoy and praying the Almighty, keeping our fingers crossed. Couple of hours prior reaching the "death-trap" buoy, all the Officers & crew were in muster station, with life jackets donned except for the Master, duty Officer, helms man, who were in the bridge with the pilot and one duty engineer in engine room.



*Mr. G. Mohandass*

Our prayers were answered. Safely the entire convoy escaped the ordeal. We dispersed from Muster station, pilot went away, even then fears were gripping everyone. E/O, trainee R/O were sharing my cabin for that night. The reason being, they considered me as a brave person who was narrating many stories all along, to stay courageous. What a great relief, finally we were out of Iranian waters. Now the entire complement of the vessel wants to call their family and convey the news. I became very busy and got them all connected to their family. Thanks to Bahrain radio. We sailed at full speed to a port called SPLIT, in Yugoslavia.

Upon arrival, our engineering Superintendent boarded vessel and announced an unpleasant news.

The vessel will be loading full cargo in Yugoslavia and the discharge port will be Bandar Khomeini.

This time no meeting, no discussions, only mere declaration, no one want to go back to IRAN, nor wants double wages.

“Once bitten, twice shy”

Cursing our greedy and ruthless ship owner, we all paid our air-fare and signed off from the vessel.

(Alas, we could have saved the air-fare amount, if MLC was in force, then.)

## Manned Ships Era

### Artificial intelligence controlled ships era (iota-2)

In 1980's distinction between Weak AI (idea that machines could act as if they were intelligent) and Strong AI (machines that do so are actually consciously thinking)- overtime definition shifted to Strong to Human Level AI.

**Turning Test:** The test for machines which passed behavioral test. This leads to make many technologies based useful tools.

**Ethics of AI:** AI is a powerful technology, we have moral obligations to use it well in a positive aspect such as improved medical diagnosis, medical discoveries, better prediction of extreme weather events, self-driving automated cars, crisis counseling, new fact checking, suicide prevention, measurement of fossil fuel emissions.

Recently, The Supreme Court of India and the Indian Institute of Technology, Madras (IIT M) have signed a **Memorandum of Understanding (MoU)** aiming at facilitating the digital transformation of the Indian judiciary. Through this partnership, IIT Madras will utilise **Artificial Intelligence (AI)** and emerging technologies in day-to-day proceedings of the Supreme Court.

In the **MASS (Maritime Autonomous Surface Ship)** era the **Drones and Robotics** will be used for **Fire Fighting** .... As well as Maritime Cyber security will also be a challenging one with respect to pirates...



*“Investing on Yourself is the best investment”.*

*Ch. Er. Abdul Rasheed*



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## Cyber security in the maritime industry - Part 01

### INTRODUCTION

In today's digitally interconnected world, the maritime industry is no exception to the growing threat of cyber attacks. Ships, ports, and logistics systems are increasingly relying on technology and automation, making them vulnerable to cyber threats. This article explores the importance of cyber security in the marine field and the measures that must be taken to protect the industry from potential dangers.

### THE GROWING IMPORTANCE OF CYBER SECURITY IN MARITIME

As technology has advanced in the maritime sector, it has brought numerous benefits, including improved efficiency, better navigation, and enhanced communication. However, this digital transformation has also exposed the industry to cyber security risks.

The implications of a cyber attack in the maritime field can be dire, potentially leading to ship accidents, environmental disasters, and financial losses

### COMMON CYBER SECURITY THREATS IN THE MARITIME INDUSTRY

- 1. Phishing Attacks:** Cyber criminals often send deceptive emails or messages to ship crew, port personnel, and maritime organizations, tricking them into revealing sensitive information or installing malware.
- 2. Ransom-ware:** Ransomware attacks can cripple shipping operations by encrypting critical data, demanding a ransom for decryption, and causing significant downtime.
- 3. Vessel System Hacks:** Cyber attacks can compromise a ship's control systems

## FUN FACTS

- 4. Port Infrastructure Attacks:** Ports rely heavily on automated systems, making them susceptible to cyber intrusions that can disrupt cargo operations.
- 5. IoT Vulnerabilities:** With the increasing use of the Internet of Things (IoT) devices on ships, there's a growing attack surface for cyber criminals to exploit.

*Bet you didn't know.....*

There are no muscles in your fingers: Their function is controlled by muscles in your palms and arms..



## Cost of a Misstep

On a vessel, an Engineer, assisted by a trainee were replacing the fuel filter on a diesel generator. As he was removing nuts to replace the filter, the gasket suddenly burst. A jet of hot diesel fuel sprayed out and onto both people. One victim suffered burns on his neck and lips, while the other had minor skin irritation on his hands. The Engineer had not shut the inlet and outlet valves of the fuel filter nor checked the pressure gauge before unbolting. Furthermore, he wasn't familiar with that specific maintenance job. The lack of strict supervision from senior staff contributed to the chain of errors resulting in the incident.

## Lessons learned form Mistake

- Adherence to the onboard safety procedures and other instructions such as the manufacturer's information manual is a prerequisite for safe operations.
- Proper supervision and a detailed toolbox meeting are key for safer operations.



*Capt. Moovendhan J*

# Innovation and technology in maritime search

## **Inmarsat Maritime safety team wins IMRF award for innovation and technology in maritime search and rescue in Navigation, Autonomy & New Technologies**

Inmarsat Maritime, a Viasat business, has won the 2023 International Maritime Rescue Federation (IMRF) Award for Innovation and Technology in Maritime Search and Rescue after a highly respected judging panel led by former IMRF Chair Michael Vlasto selected its entry from a shortlist of 10 individuals and organisations.

Acknowledging “volunteer and professional search-and-rescue (SAR) personnel from around the world”, the prestigious award highlights “those who have shown excellence in their field, developed innovative technology and equipment, or acted as a role model to inspire others”.

Ben Palmer, President, Inmarsat Maritime, said “The Inmarsat Maritime Safety team works tirelessly to ensure that global satellite SAR capabilities are maintained to a standard above and beyond what is expected by the International Maritime Organization, and this award is testament to those efforts.

The Inmarsat Maritime Safety team design and develop services to support SAR operations, such as the recently launched RescueNET, which delivers fast, reliable, and approved SAR communications from ship to shore, from shore to ship, and between maritime rescue coordination centres (MRCCs).

To help users take full advantage of the capabilities offered by RescueNET and other Inmarsat safety services, the team provide training to SAR authorities worldwide and have created free online training packages for organisations to learn and test their capabilities using satellite services. They also participate in global SAR exercises to offer recommendations for change and provide support in capacity building and training within established and developing MRCCs.

The Inmarsat Maritime Safety team are on call around the clock to assist in SAR efforts – even those not initiated by Inmarsat equipment – and have developed relationships and procedures between Inmarsat and SAR organisations to enhance tracking

In addition, they have created an SAR API to streamline SAR communications and their integration into operational systems. Emphasising their commitment to maritime safety, they have achieved all of the above with no cost to the SAR community.



*Mr. G. Mohandass*



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