



INFORMATION FUSION CENTRE

JAN – JUN 2022
MID-YEAR REPORT

MARITIME SECURITY SITUATION

IFC AOI 2022





SECTION A: Theft, Robbery And Piracy At Sea (TRAPS)
• Sea Theft/Robbery Situation and Risk Posed To Mariners. **By Risk Intelligence**



SECTION B: Maritime Terrorism



SECTION C: Maritime Incidents (MI)
• Understanding Maritime Incident Trends: Risk And Impact From An Insurance Perspective. **By Standard Club**



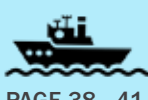
SECTION D: Illegal, Unregulated, and Unreported Fishing (IUUF)



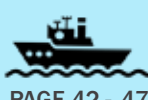
SECTION E: Contraband Smuggling (CS)
• The Threat from Drug Smuggling. **By International Chamber of Shipping**



SECTION F: Irregular Human Migration (IHM)



SECTION G: Environmental Security (ENVSEC)



SECTION H: Cyber Security (CYBSEC)
• A Case Study Of Nation Attacks On Ships; Survey Results and Summary of Key Findings. **By CyberOwl**

NOTE: Information herein was derived from various internal and external sources such as Focal Points, OPCENs and other maritime stakeholders. Seafarers should remain vigilant especially in areas where the threat level is assessed to be of concern in accordance with the IFC's Assessments via its Weekly Report or Spot Commentaries. Ships should apply the appropriate security measures (such as Tugs and Barge Guide, Guide for Tankers Operating in Asia, or Regional Guide to Counter Piracy and Armed Robbery Against Ships in Asia). Ship masters should also be aware and refer to the Maritime Security Charts Q6112 and Q6113, both published by the UK Hydrographic Office.



Dear Readers

I am delighted to present to you the Information Fusion Centre's Mid-Year Report for 2022, which provides an overview of the Maritime Security situation within the IFC's Area of Interest in the first half of the year, and offers IFC's assessment of what we can expect for the rest of 2022. This report covers the eight MARSEC categories that IFC monitors:

- 1 Theft, Robbery, and Piracy at Sea (TRAPS)
- 2 Maritime Terrorism (MT)
- 3 Maritime Incidents (MI)
- 4 Illegal, Unreported, and Unregulated Fishing (IUUF)
- 5 Contraband Smuggling (CS)
- 6 Irregular Human Migration (IHM)
- 7 Environmental Security (ENVSEC), and
- 8 Cyber Security (CYBSEC).

Overall, the IFC recorded a total of 1441 incidents across all eight MARSEC categories from January to June 2022. This represents a 49.3% increase in the overall number of MARSEC incidents reported compared to 2021 (965 incidents) over the same window. This increase may be due to two key factors:

- 1 the easing of COVID-19 pandemic restrictions, which enabled a corresponding increase in maritime and illicit activities; and
- 2 improved data collection and incident reporting to relevant authorities.

Of note, IHM saw the highest percentage increase amongst IFC's eight MARSEC categories, possibly due to a combination of push and pull factors such as unstable economy and a lack of security in home

“... all credit goes to our International Liaison Officers and MARSEC partners who have contributed to the report, which I am certain would provide our readers with an insightful overview of the latest MARSEC trends within the IFC's AOI.”

countries; and the lure of more promising outlooks abroad (job opportunities, greener pastures).

Similarly, we saw an increase in the number of TRAPS incidents recorded in the first six months of 2022, with the Singapore Strait being the primary area of concern given that it accounts for almost half of all TRAPS incidents recorded in IFC's AOI. Nonetheless, the modus operandi of these perpetrators remains largely consistent with that of petty crime, with most avoiding confrontation and fleeing upon being sighted.

The IFC assesses that the general trend over the next six months of 2022 will remain similar to that observed in the earlier half of the year, as adverse weather conditions and COVID-related factors are expected to persist. Let us endeavour to continue sharing timely and accurate information so we can effectively combat maritime crime to achieve Safe and Secure Seas for All.

Last but not least, all credit goes to our International Liaison Officers and MARSEC partners who have contributed to the report, which I am certain would provide our readers with an insightful overview of the latest MARSEC trends within the IFC's AOI.

LTC Lester Yong
Head, Information Fusion Centre

THEFT, ROBBERY AND PIRACY AT SEA (TRAPS)

1. OVERVIEW

From January to June 2022, the IFC recorded a total of 59 incidents in the IFC’s AOI; this was higher compared to the same period in 2021 (42 incidents), and 2020 (57 incidents), but lower than 2019 (65 incidents). The overall increase is likely due to the combination of factors such as (a) the economic impact of COVID-19, which may have driven more people to resort to crime at sea to make ends meet, (b) more incidents being shared with the IFC by our partners, and (c) more active reporting by shippers, possibly due to increased trust that authorities would take action.

The areas that recorded the highest number of incidents thus far in 2022 were (a) The Singapore Strait (b) Chittagong Port, Bangladesh and (c) Belawan Anchorage, Indonesia. In the second half of 2022, the IFC expects the overall trend in TRAPS numbers to remain consistent with what was observed in the first half of 2022, with the possibility of spike(s) as the impact of COVID-19 remains unpredictable.



INCIDENTS OF TRAPS at a glance	
JAN - JUN 2022	59 incidents
2021	42 incidents
2020	57 incidents
2019	65 incidents



THEFT, ROBBERY AND
PIRACY AT SEA (TRAPS) cont'd

DEFINITIONS OF TRAPS CLASSIFICATIONS

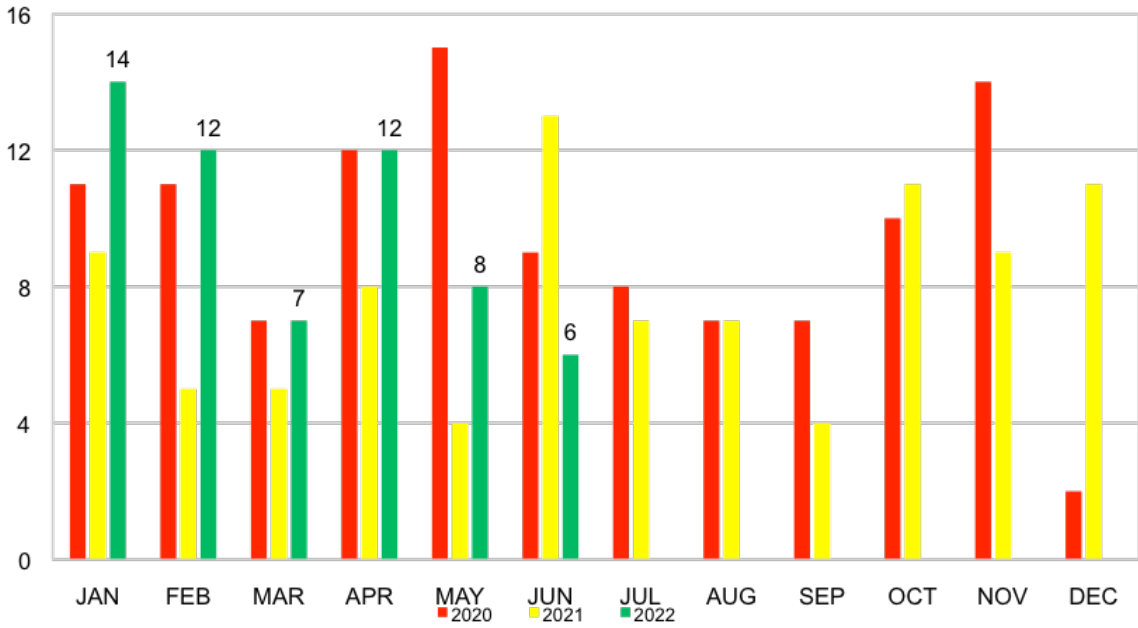
MAIN CLASSIFICATION <small>(Description of Incident)</small>	EXPLANATORY NOTES
HIJACKED	Any illegal act of violence whereby perpetrators HAVE boarded AND taken control/detained a vessel and/or its crew against their will.
BOARDING	Refers to whereby the perpetrators have boarded a ship but HAVE NOT taken control. Command remains with the Master. This also includes unsuccessful attempts to rob or steal from vessel during boarding. <small>Note: Additional Information (e.g. use/discharge of weapons during the boarding) will be highlighted in the IFC comment box.</small>
ATTEMPTED BOARDING	Any suspicious act including but not limited to vessel(s); <div><div>1</div> Having a very close CPA, (close approach or hull-to-hull contact) with boarding paraphernalia employed or visible and/or</div> <div><div>2</div> weapons clearly seen on display or use/discharge as a show of force or threat against the merchant vessel. <small>Note: Additional Information (e.g. use/discharge of weapons during the boarding) will be highlighted in the IFC comment box.</small></div>
SUSPICIOUS APPROACH	Any act of vessel(s) approaching close proximity enough to warrant suspicion. No boarding paraphernalia or weapons are sighted onboard.

2. KEY FACTS

The 59 incidents reported in IFC's AOI in 2022 is higher than that recorded in 2021 by 16 incidents (25%). Of the 59 incidents, 50 involved boarding, five attempted boarding, three hijacking, and one suspicious approach. January 2022 had the highest number of incidents recorded, accounting for 14 out of the 59 incidents (23%).

Most incidents reported in the first half of 2022 continue to be petty theft and non/low-violent in nature, with perpetrators choosing to flee upon being sighted. Sixteen out of the 59 incidents reportedly involved armed perpetrators (knives, crowbars or gun-like objects), which is a slight increase when compared to 2021 within the same window (13 incidents). Out of 16 incidents reportedly involving armed perpetrators, only two incidents resulted in serious injuries. Additionally, 10 out of the 59 incidents (18%) involved confrontation with crew members, an increase compared to 2021.

MONTH-TO-MONTH COMPARISON OF INCIDENTS IN 2022



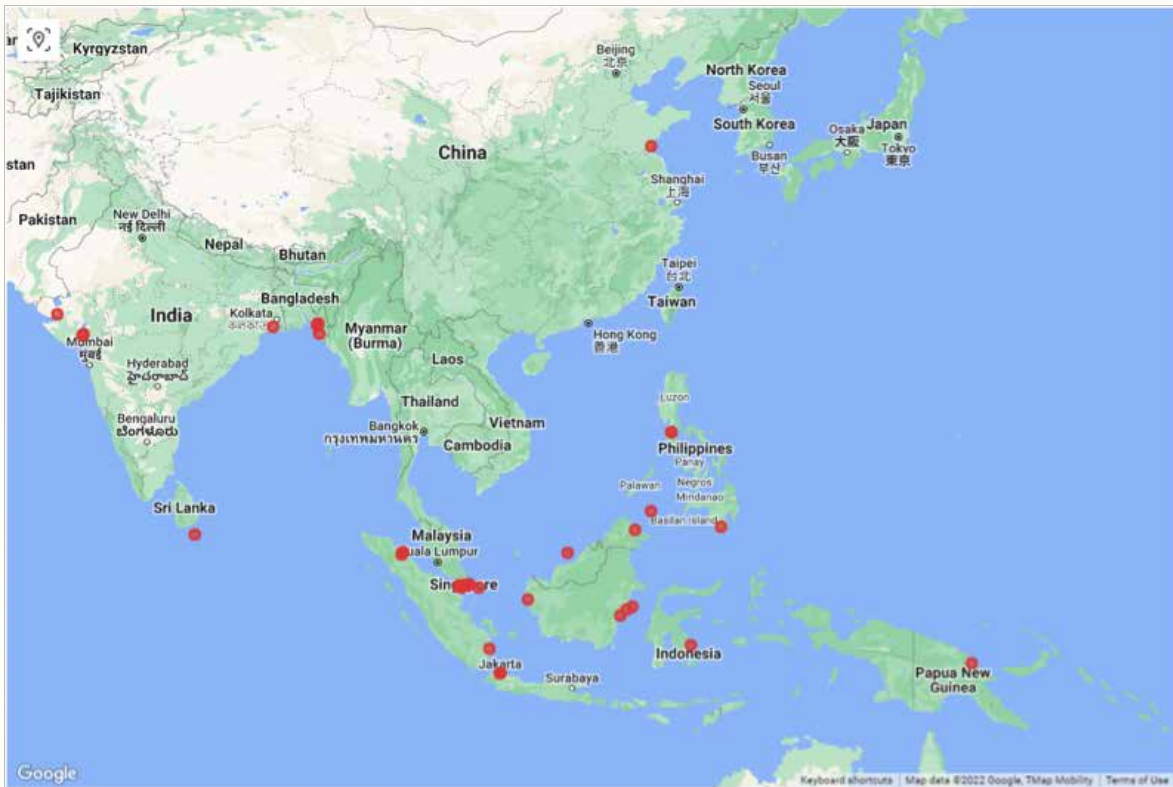
Tankers were the most targeted vessels in the IFC AOI with 20 incidents (35%), followed by bulk carriers (33%). The remaining incidents involved tugs-and-barges (10%), fishing vessels (10%), container vessel (3), small boat (2), barge (1), vehicle carrier (1), pleasure craft (1), oil platform (1), and cargo vessel (1).

In the Singapore Strait, bulk carriers remain the prime target (50%), followed by tankers (36%), and tugs-and-barges (14%); this is due to them being slow moving with low freeboard. For incidents that occurred within anchorages and ports, tankers and bulk carriers were the prime targets especially in Chittagong, Bangladesh and Belawan, Indonesia.



THEFT, ROBBERY AND
PIRACY AT SEA (TRAPS) cont'd

LOCATIONS OF INCIDENTS



3. OBSERVATION/ASSESSMENT

Overall, the IFC observed that the Modus Operandi of perpetrators in IFC AOI remains consistent with that of petty crime and thus are usually opportunistic in nature.

SINGAPORE STRAIT

There were 27 incidents recorded in the Singapore Strait in the first half of 2022, which accounts for 43% of the total incidents recorded in IFC's AOI for this period. The Singapore Strait has recorded the majority of the incidents for IFC's AOI annually since 2009; this is likely due to the dense traffic conditions, which makes enforcement challenging and also causes shipping to travel at reduced speeds, making them easier targets. Of note, the Singapore Strait is filled with sampans/small boats involved in fishing activity during periods of darkness (PoD), providing camouflage for the perpetrators and making them difficult to differentiate from actual fishermen. In 2022, the majority of the incidents (23 Incidents) involved slow-moving vessels (7 - 12 knots) with medium freeboard (less than 7 metres) such as transiting bulk carriers and oil tanker during PoD.

The majority of incidents in this area occurred along the eastbound lane of the Traffic Separation Scheme (TSS), in waters off Philip Channel, North of Bintan and Batam islands. The modus operandi of perpetrators in Singapore Strait is considered opportunistic and usually in groups of four to six perpetrators on one or two sampans/small boats, targeting ship engine parts and stores. The same group of perpetrators might target a few vessels in succession on the same night, especially if initial attempt(s) were unsuccessful. The IFC observed that incident numbers declined by 50% when comparing the first and second quarters of 2022. Specifically, incident numbers dropped significantly from March; this may be due to (a) increased vigilance and active reporting by shippers, and (b) step-up of enforcement efforts on land and at sea by the regional authorities. These efforts have led to the successful foiling of boarding attempts and arrest(s) e.g. the Singapore Police Coast Guard successfully arrested nine men involved in stealing scrap metal from a barge.

AREA OF CHITTAGONG PORT

There were five incidents recorded in the area of Chittagong Port, which is considered high considering that there were no incidents reported in 2021, and only two in 2020. The recorded incidents involved mainly tankers and bulk carriers and mainly occurred during PoD and on vessels within the anchorage. In all reported incidents, there was no confrontation with the crew, and the perpetrators fled upon discovery by the crew. The common items stolen were paints and ship stores.

BELAWAN ANCHORAGE

There were four incidents recorded in the Belawan Anchorage, which involved mainly tankers and bulk carriers. The majority of the incidents happened on anchored ships, targeting spare parts, and in periods of darkness. In most reported incidents, there were no confrontations with the crew and the perpetrators fled upon discovery by the crew.



THEFT, ROBBERY AND
PIRACY AT SEA (TRAPS) cont'd

4. FORECASTS/WAY AHEAD

Overall, incident numbers have increased when compared to the same window in previous years. These numbers can be linked to the shift in the approach of the COVID-19 pandemic situation in 2022, where most of the world are accepting the new norm of COVID-19 and have started to ease restrictions, compared to a temporary lockdown in 2021. In the second half of 2022, the IFC expects the overall trend in TRAPS numbers to remain consistent with what was observed in the first half of 2022. Nonetheless, it is difficult to predict how COVID-19 will continue to affect TRAPS incidents. Based on past trends, IFC assess that the modus operandi would largely remain as petty theft in nature and non/low confrontational in IFC's AOI.

Notwithstanding, it is important that regional authorities continue to remain vigilant and cooperate closely with the shipping community, who can also play an important role to prevent further incidents. As such, all ships are recommended to adopt the following measures:

- Remain vigilant: upon sighting of suspicious activities, immediately inform local authorities.
- Report all incidents, suspicious activities and presence of suspicious small boats in the vicinity to the nearest coastal state and flag state.
- Sound alarm when sighting suspicious boats/approaches in the vicinity of the ship.
- Participate in the IFC "Voluntary Community Reporting" as depicted in MARSEC Charts Q6112 and Q6113.
- Adopt Ship Protection Measures recommended in the Regional Guide to Counter Piracy and Armed Robbery Against Ships in Asia.

SEA THEFT/ROBBERY SITUATION AND RISK POSED TO MARINERS
BY RISK INTELLIGENCE

1. OVERVIEW OF THE SEA THEFT/ROBBERY SITUATION AND THE RISK POSED TO MARINERS

The main concern for operators of merchant vessels in Southeast Asia is now the threat of boardings of vessels transiting the Singapore Strait. Over the past 12 months, 64% of all reported incidents across Southeast Asia have taken place in the Singapore Strait. Virtually all of those incidents targeted vessels underway (54% of the vessels boarded are bulk carriers, 30% are tankers). As coastal authorities have increased patrols, response times are generally quick when incidents are reported. In these cases, even though perpetrators are often armed with knives or

machetes, it is unlikely they will attack the crew. For the wider region, incidents typically encountered by vessels are non-violent boardings at anchorages. Perpetrators usually board vessels at night and target supplies and engine spares while avoiding the crew. Other threats to monitor in Southeast Asia include potential thefts and armed robberies targeting vessels underway and anchored in the southern zones of the South China Sea, off Belawan, the Muara Berau anchorage off Samarinda, at Sandakan, and the anchorages along the Sunda Strait.

2. ACTIONS TO TAKE FOR MARINERS TO REDUCE RISK

Crew vigilance will remain the best prevention method in the region. An effective lookout is the most effective method of ship protection. It can help to identify suspicious small craft approaching the vessel, which allows the crew to have time

to take preventive measures. Control of access to accommodation and engine rooms can also deter and delay entry. These rooms should be properly secured to prevent them from being opened from the outside.

3. ADDITIONAL ADVICE

Vessels are strongly encouraged to report suspicious activity and provide as much detail as possible to voluntary reporting centres or military

organisations, as this is essential to improve situational awareness for security agencies and their ability to respond.

Special Thanks To
Ms Katie Zhang • Analyst for North, South and Central Asia • Risk Intelligence Singapore Pte Ltd
for her contribution of this additional feature to Theft, Robbery and Piracy at Sea.

MARITIME TERRORISM (MT)

1. OVERVIEW

From January to June 2022, no Maritime Terrorism (MT) incident was recorded in IFC AOI. The decline in overall incident numbers, compared to past years, is likely due to the strong enforcement by the regional countries, making it difficult for the potential terrorists to execute their activities. The IFC expects the number of MT incidents in the second half of 2022 to remain low as long as regional authorities are able to maintain their enforcement efforts.

2. FORECASTS/WAY AHEAD

Although no incidents of maritime terrorism were reported in 2022, authorities are encouraged to maintain vigilance toward any incident that may occur in future. Nonetheless, known terrorist groups remain active and the risk of MT incidents occurring within IFC's AOI remains.

IFC advises all vessels with a low freeboard and/or low speed such as tugs, small tankers, heavy loaders, and pleasure boats to continue their vigilance while transiting in this area, so as to prevent being easy targets to MT.

MARITIME INCIDENTS (MI)

1. OVERVIEW

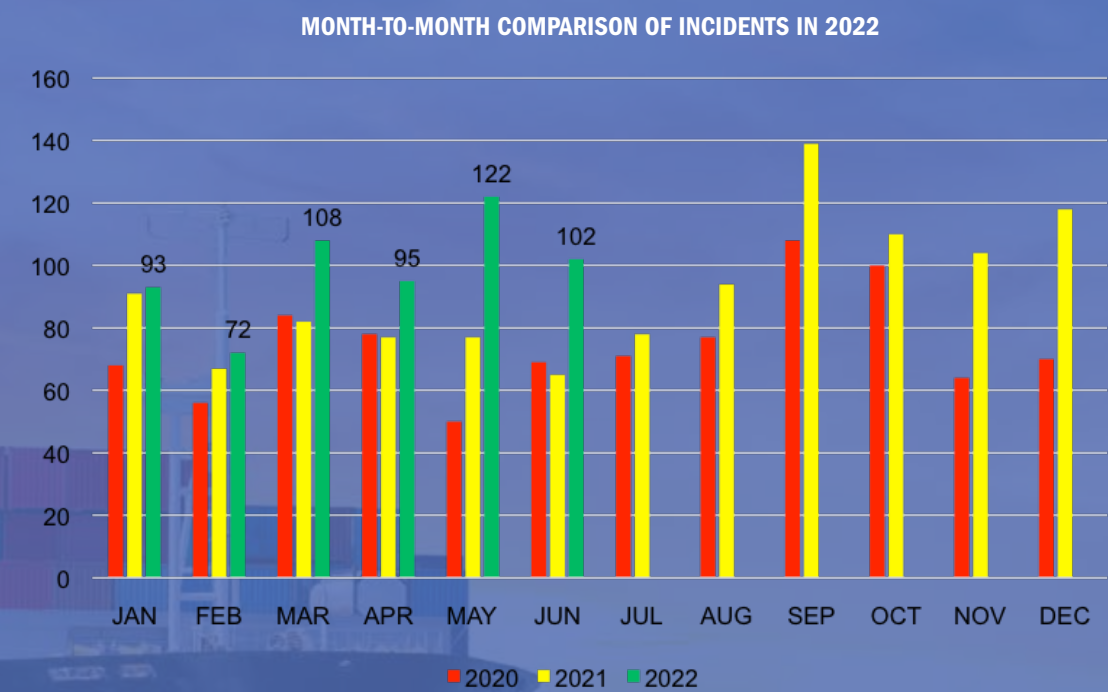
From January to June 2022, a total of 592 maritime incidents were recorded. This is the largest number of maritime incidents recorded in this period since at least 2016, and is most likely due to the continuous improvement of data collection and incident reporting in the region. The most prevalent maritime incidents are vessels sinking or capsizing, followed by adrift, grounding, vessel detained, and fires or explosions. These account for the majority of maritime incidents in IFC's AOI and are consistent with previous years. There are also indications that the rise in incident numbers could be due to the easing of COVID-19 measures across regional countries. As a result, sea traffic also increased, thus making incidents at sea more likely as well. Based on the trending of the past two years, IFC expects to see an increase in incidents particularly during the months of July to October due to the onset of the monsoon season.

DEFINITIONS OF MI CLASSIFICATIONS

MI CLASSIFICATIONS	EXPLANATORY NOTES
ALLISION	The striking or running of one ship upon another ship or object that is stationary, whether its occurrence is at sea or in port.
AVIATION INCIDENT	Aviation related activities in the maritime domain, such as aircraft crash
CARGO MISHAP	Cargo (such as containers) falling overboard
COLLISION	When two (or more) vessels collide
FIRE-EXPLOSION	Fire and/or explosion in the maritime domain
GROUNDING	Any type of vessels run aground accidentally to rocks, reefs, sand bar, atolls etc.
MECHANICAL FAILURE	Mechanical shipboard systems failing to perform their intended function (such as engine, steering, switchboards etc.)
MEDEVAC	When crew are evacuated from their vessel due to a medical emergency
MOB	Crew/passengers have gone overboard from a vessel into the maritime domain
MISSING	Vessel/personnel is absent/lost
SUNK-CAPSIZED	Vessel overturned/submerged into the water
VESSEL DETAINED	Incidents arising from vessel/ personnel engaged in unauthorised activities in the maritime domain
VIOLENT CONFRONTATION	Incident whereby violence (such as use of force) is used in an encounter between two or more parties
WORK ACCIDENT	Incident which occurred due to accident in routine work (e.g. fisherman electrocuted while recovering nets)
ADRIFT	Vessel/Raft floating in uncontrolled directions without either being moored or steered
OTHERS	Incidents that do not explicitly fall into other MI classifications such as, but not limited to, vessel flooding, vessels being partially submerged, sea incidents involving natural disasters (e.g. typhoon, storm surge, tsunami, undersea landslide) etc.

2. KEY FACTS

From January to June 2022, a total of 592 maritime incidents were recorded. This is higher than 2021 (458) and 2020 (397), and for at least the four years before that. There is a notable spike of incidents for the month of May due to bad weather and poor sea conditions. In particular, Indonesia and India saw an increase of maritime incidents due to adverse weather conditions brought about by cyclones (ASANI and KARIM) affecting the region.

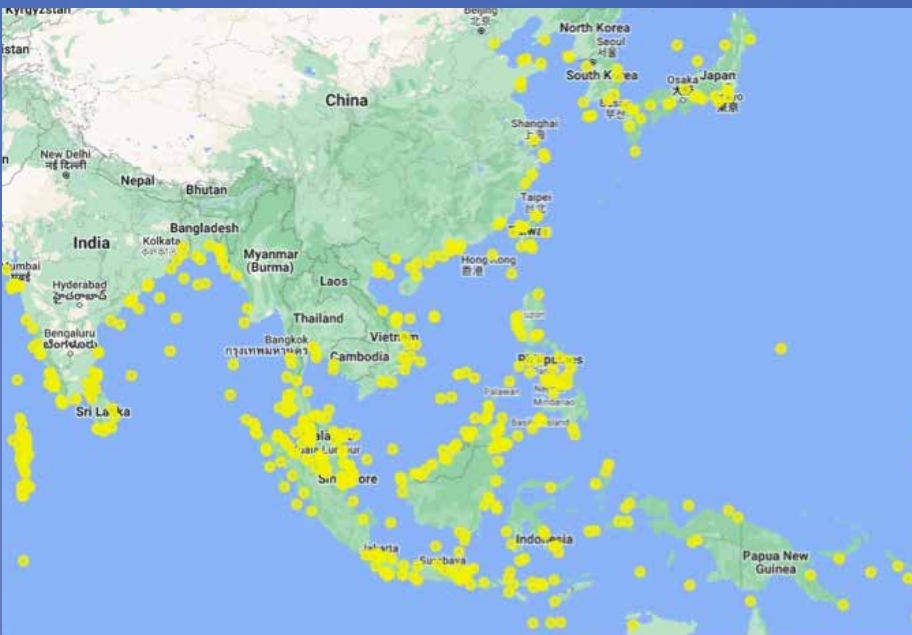


The most prevalent maritime incidents are vessels sinking or capsizing (27.5%), followed by vessels which were adrift (9.5%), grounding (9.0%), vessels that were detained (7.2%), and those which are categorised as others (mainly vessels expelled and partially submerged, 7.2%).

A total of 482 persons were recorded dead/missing at sea. Sixty-two (13%) were seafarers (ship crew and sailors), while 168 (35%) were fishermen, and the remaining 252 (52%) comprised persons that do not earn their livelihood out at sea, such as tourists, migrants and ship passengers. Most deaths and cases of missing persons were due to sunk/capsized vessels caused by bad weather and rough seas.

For the first half of the year, Indonesia (137) logged the majority of the maritime incidents, followed by Malaysia (113), India (67), Maldives (45), and Philippines (40).

LOCATIONS OF INCIDENTS



3. OBSERVATION/ASSESSMENT

There was an increase in the number of incidents in the months of March and April 2022, which is similar to the trend observed in previous years. There was a notable increase in incidents in May due to the adverse weather conditions (Cyclone ASANI and KARIM) that occurred both in Indonesia and India. While the majority of the vessels involved in maritime incidents are fishing vessels, it is worth pointing out that there is a notable increase of incidents involving passenger ships in 2022 as compared to 2021. This shows that the easing of COVID-19 measures has resulted in an increase in travel between coastal areas, probably due to a combination of work, tourism, or just people going back to their respective homes.

4. FORECASTS/WAY AHEAD

Based on records in the past years, maritime incidents are expected to increase in the upcoming months, especially in the months of July to September due to the onset of the monsoon season in the region. Poor weather conditions remain the principal cause of maritime incidents, thus all seafarers are advised to be cautious and diligently check weather forecasts before venturing out to sea. Meanwhile, coastal states are also advised to remain vigilant especially in ensuring the safety of life at sea, as the region experiences the increased utilisation of passenger vessels in IFC's area of interest.

UNDERSTANDING MARITIME TRENDS:

The shipping industry often finds itself in a turbulent seascape; and, despite best efforts, incidents or accidents like collisions, groundings, pollution, fires and personnel injuries occur. These are the risks and liabilities to which Protection and Indemnity (P&I) insurers, such as Standard Club, respond.

The 13 P&I clubs that make up the International Group (IG) insure about 90% of the world's ocean-going tonnage. The clubs are competitors as well as comrades in sharing the large loss exposures, and in addressing the needs of shipowners' liabilities through pooling and reinsurance facilities.

Based on Standard Club's experience, cargo claims continue to contribute significantly to the overall number of claims, followed by crew injury and illness claims.

Cargo misdeclaration has been the bane of the shipping industry, particularly in the container sector. Goods are misdeclared for a variety of reasons, the main one being to avoid incurring any additional costs for the carriage of dangerous cargo, and to bypass carrier restrictions. Commonly misdeclared goods include charcoal, batteries, and calcium hypochlorite. These goods are fairly inexpensive but the cost of transporting them can be expensive, especially if the shipping lines restrict

or impose a surcharge for doing so. Standard Club published its *Better Box Booking* publication in 2018 to guide the industry on the matter.

As container ships get bigger and carry more cargo, the club's exposure increases due to the high volume and value of cargo transported on a single voyage – one rogue box can destroy thousands if it burns or explodes at sea. Unfortunately, as ship sizes grow, ship designs, particularly in relation to safety systems, often evolve at a slower rate than the cargo types they carry. Representatives from H&M insurers and the major P&I clubs, including Standard Club, have formed a working group to study this critical issue.

Another issue that plagues the container shipping industry is the loss of containers at sea. As per a recent report published by the World Shipping Council (WSC), the average number of containers lost at sea over the two-year period (2020 -2021) increased to 3113, up from 779.

Triggered by this concerning trend, Standard Club, together with other IG clubs, is among the partners of the MARIN TopTier project. This project is based on scientific analysis (desktop as well as real-life measurements) and aims to develop specific, actionable, and effective recommendations to avoid loss of containers at sea.

RISK AND IMPACT FROM AN INSURANCE PERSPECTIVE

BY STANDARD CLUB

In the dry-bulk sector, cargo liquefaction continues to be a major concern. A recent report from Intercargo highlights that between 2012 and 2021, cargo liquefaction accounts for the highest loss of life with five casualties resulting in 70 lives lost or 76.1% of the total loss of life in the past ten years. Most of those ships were carrying nickel ore.

It was because of these frequent casualties that Standard Club's loss prevention team conducted a detailed analysis of its members that engaged in this trade and published guidance documents to raise awareness of the dangers and measures available to mitigate these risks.

From the claims trend, it is also worth noting that by individual claim value, navigation-related claims continue to be the biggest contributory factor. Many investigation reports attribute these claims to poor lookout, improper passage planning, lack of situational awareness, poor communication between the ship's officers and pilots, and incorrect use of navigation equipment. These findings were reconfirmed through the Standard Club's recent member navigational project. The findings of this project will be released later this year.

Against the backdrop of pandemic-driven isolation and uncertainty, crews reported exhaustion, fatigue, anxiety and stress. These factors have a direct correlation with safety on ships, as human error is one of the primary causes of incidents.

Standard Club champions seafarer wellbeing and is a signatory to the Neptune Declaration on Seafarer Wellbeing and Crew Change; it is also a proud sponsor of the Seafarers Happiness Index by Mission to Seafarers. The index is designed to monitor and benchmark seafarer satisfaction levels to encourage positive change to improve living, working and safety standards at sea.

As a major pillar of its risk management strategy, Standard Club's loss-prevention team continually monitors claims to identify trends, causes of incidents. The Club conducts a rolling programme of initiatives targeting common root causes of claims as well. These initiatives vary greatly from information campaigns to cutting-edge research with several involving close collaboration with external partners to achieve the common goal of making the maritime industry a safe working environment for everyone.

“Against the backdrop of pandemic-driven isolation and uncertainty, crews reported exhaustion, fatigue, anxiety, and stress. These factors have a direct correlation with safety on ships, as human error is one of the primary causes of incidents.

ILLEGAL, UNREGULATED, AND UNREPORTED FISHING (IUUF)

1. OVERVIEW

From January to June 2022, a total of 279 incidents were recorded in the IFC AOI. This is 58.5% higher than the number of incidents recorded in 2021 over the same period, and assessed to be due to the loosening of COVID-19 restrictions and reopening of the fishing industry in January 2022. The majority of local IUUF incidents were recorded in Malaysian and Indonesian waters, while Vietnam-flagged fishing vessels were involved with the highest number of poaching IUUF incidents. As more countries lift COVID-19 restrictions and fully reopen fisheries, the IFC expects the number of IUUF incidents in IFC AOI to be higher compared to the same period in 2021.

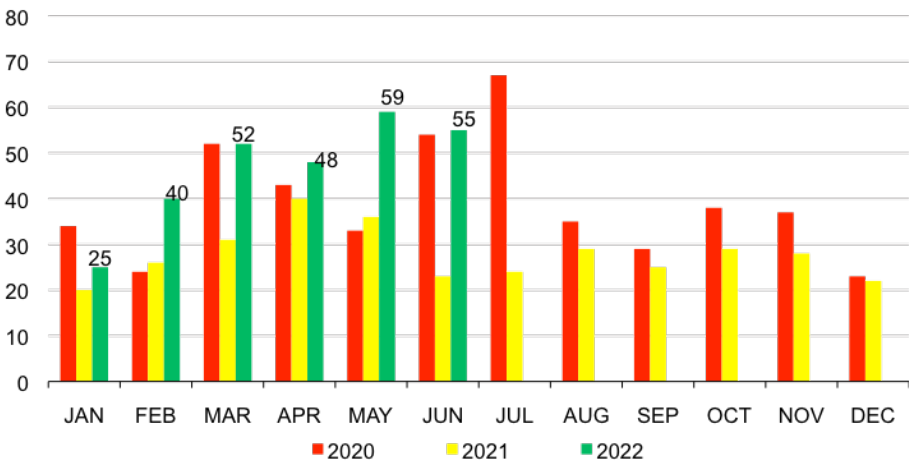
DEFINITIONS OF IUUF CLASSIFICATIONS

IUUF CLASSIFICATIONS	EXPLANATORY NOTES
LOCAL	Conducted IUU fishing by national vessels, or foreign vessels which have a license to fish , in waters under the jurisdiction of a state, in contravention of its laws and regulations.
POACHING	Conducted IUU fishing by foreign vessels in waters under the jurisdiction of a state, without the permission of that state, or in contravention of its laws and regulations.
INTERNATIONAL	Conducted IUU fishing by vessels (declared as an IUU vessel by Regional Fisheries Management Organizations (RFMOs) such as IOTC, WCPFC, etc. and other official organisations such as INTERPOL) in contravention of regional regulations or international laws and regulations.

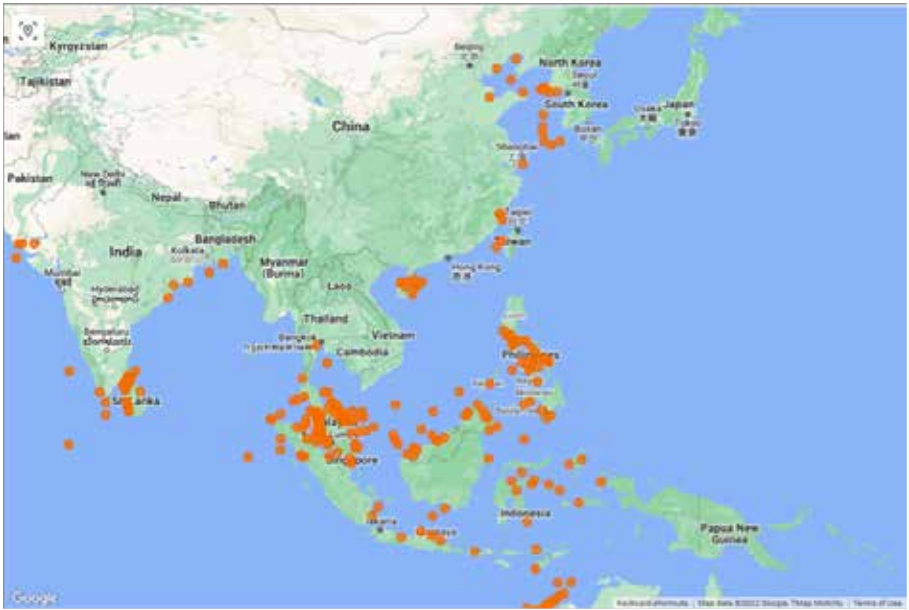
2. KEY FACTS

Overall, 279 IUUF incidents were reported in IFC's AOI in the period of January to June 2022. This figure is higher than the same period in 2021 by 103 incidents (58.5%). The largest number of IUUF incidents was reported in May 2022, which was 59 incidents. The highest number of poaching incidents reported since 2017 was in March 2022, with 25 incidents. The IFC identified waters off (a) Malaysia and Indonesia (b) Sri Lanka and India (c) the Philippines, and China as the main vulnerable areas for IUUF activities, with 145 incidents (52%), 38 incidents (13.7%), 32 incidents (11.6%), and 20 incidents (7.2%) recorded respectively. The majority of local IUUF incidents were reported in waters off Malaysia and Indonesia, while Vietnam-flagged fishing vessels occupied the largest amount of illegal fishing in other countries' maritime zones.

MONTH-TO-MONTH COMPARISON OF INCIDENTS IN 2022



LOCATIONS OF INCIDENTS



ILLEGAL, UNREGULATED, AND UNREPORTED FISHING (IUUF) cont'd

3. OBSERVATION/ASSESSMENT

IFC assesses that the main reason contributing to the spike in incident numbers in the first half of 2022 is due to the easing of COVID-19 restrictions and reopening of the fishing industry in Asian countries, such as Malaysia, Indonesia, and Vietnam. Countries' lockdown and movement restriction measures to prevent the spread of COVID-19 were eased in January 2022. Most of the IUUF incidents were reported in Malaysia-Indonesia, Sri Lanka-India, Philippines, and China by 145 incidents (52%), 38 incidents (13.7%), 32 incidents (11.6%) and 20 incidents (7.2%), respectively.

The number of poaching incidents between January and June 2022 increased by 38.1% compared to the same window in 2021. One hundred and sixteen poaching incidents were recorded in the first half year of 2022, with the highest monthly number recorded in March 2022, with 25 incidents, which incidentally was also the highest recorded since 2017.

Vietnamese fishing vessels were involved in the highest number of poaching incidents, with 39 incidents (33.6%) recorded. Although the Vietnamese government has tried to combat IUUF by increasing monitoring equipment and strengthening legal framework since 2021, Vietnam-flagged vessels have still been reported to commit poaching in the waters off Malaysia and Thailand. Indonesia-flagged vessels accounted for 19 poaching incidents (16.4%), which was the second highest after Vietnam, and frequently conducted their activities in waters north of Australia.

During the blue crab season, China-flagged fishing vessels were reported to be conducting poaching in the waters off Republic Of Korea (ROK), accounting for 13 incidents (11.2%); this is the same number of incidents reported involving India-flagged fishing vessels operating off Sri Lanka. The Sri Lankan Navy and ROK Coast Guard have continued to crack down on Indian and Chinese fishing vessels operating overseas without license, respectively.

For local IUUF incidents reported between January and June 2022, the number of incidents also increased by 55.2% compared to the same window in 2021. One hundred and sixty-three local IUUF incidents were reported in the first half of 2022. The waters off Malaysia was the most vulnerable area for local IUUF with 62 incidents (38%), followed by waters off Indonesia, the Philippines and China, with 33 incidents (20.2%), 32 incidents (19.6%) and 20 incidents (12.3%), respectively.

Over the first six months of 2022, many countries around the world have tried to cooperate in combating the use of illegal fishing methods, such as electro, blast and trap fishing in Asia. For instance, the cooperation between the U.S., Japan, Australia and India unveiled a maritime initiative at the Quad summit in Tokyo May 2022 to curb illegal fishing in the Indo-Pacific region. Also, the Malaysia and Indonesia Marine and Fisheries Affairs agreed to hold joint patrols against illegal fishing in February 2022. While efforts and measures are in place, it will take time to see results.

ILLEGAL, UNREGULATED, AND UNREPORTED FISHING (IUUF) cont'd

4. FORECASTS/WAY AHEAD

The IFC expects the number of IUUF incidents in IFC AOI to be higher compared to the same period in 2021, as more countries lift COVID-19 restrictions and fully reopen fisheries. Combating IUUF needs enormous effort from every element in the fishing industry and requires a long-term process for accomplishment. The IFC would like to encourage all regional law enforcement agencies to maintain vigilance and thoroughly educate all fishermen accordingly to fishery laws and regulations.



CONTRABAND SMUGGLING (CS)

1. OVERVIEW

From January to June 2022, the IFC recorded a total of 353 Contraband Smuggling (CS) incidents in the IFC’s AOI, which was higher than 2021 and 2020. This is likely a result of:

- a increased smuggled goods transiting via maritime routes due to the opening up of borders.
- b the world economy suffering from the Russia and Ukraine war, which caused the disruption of supply chains, increasing the price of oil and gas.
- c the increase in domestic demand of goods,

pushing prices higher and making it more lucrative for people to smuggle domestic products.

Most incidents recorded occurred in the waters off Malaysia, Indonesia, China and Hong Kong. Of note, Domestic Products Smuggling accounted for the highest number of CS incidents in 2022. The IFC expects the number of CS incidents in the second half of 2022 to remain within similar levels reported in the first half of the year.

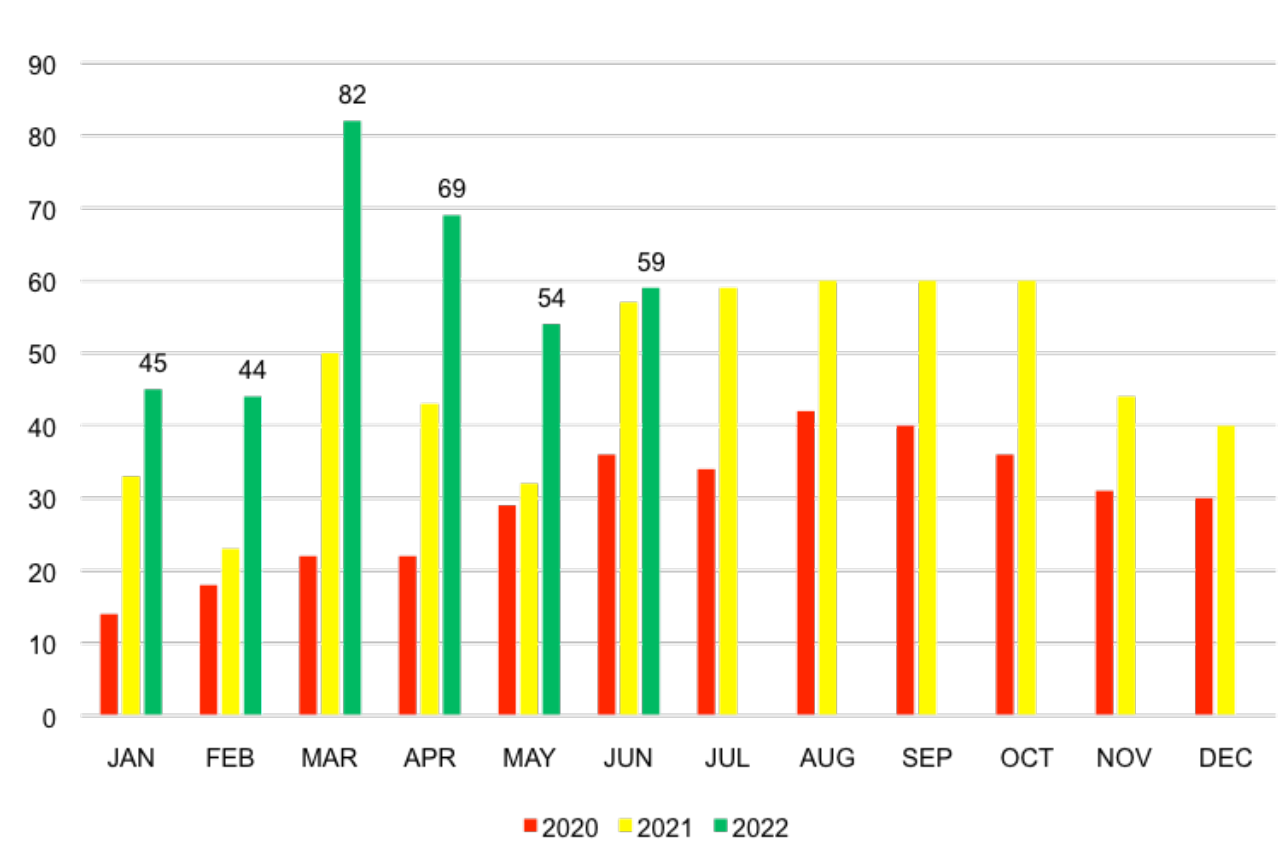
DEFINITIONS OF CS CLASSIFICATION

CLASSIFICATIONS (Types of smuggling)	EXPLANATORY NOTES
DRUGS	When the smuggled goods are substances with a physiological effect on the body E.g. Methamphetamine, Cocaine, Cannabis
FUEL	When the smuggled goods are fuel products E.g. Petroleum, Crude Oil, Gas
NATURAL RESOURCES	When the smuggled goods are resources that are harvested from nature E.g. Gold, Sandalwood, Wood, Sand, Metals
DOMESTIC PRODUCTS	When the smuggled goods are either common household products or manufactured items E.g. Rice, Flour, Salt, Gas Cylinders, Plastic, Cars, Alcohol
WILDLIFE	When the smuggled goods are live animals or animal parts listed under CITES; E.g. Elephant Tusk, Pangolin Scales, Tortoises, Sloths
WEAPONS	When the goods smuggled are designed for inflicting bodily harm or any form of damage E.g. Guns, Knives, Explosives
TOBACCO	When the smuggled goods are a product of the tobacco plant E.g. Cigarettes, Cigars, Chewing Tobacco
OTHERS	When the smuggled goods are anything outside of the above categories E.g. Cash, Chemicals

2. KEY FACTS

The 353 CS incidents reported in the IFC’s AOI represent a 48% and 150% increase from the 238 incidents in 2021 and 141 incidents in 2020 respectively. The IFC recorded an increase for all CS classifications (See **Table 1** for Classification Details); Drugs Smuggling and Domestic Product Smuggling incidents (109 each out of 353 incidents) contributed the most to the overall CS numbers. Of note, there was a 118% increase in Domestic Products Smuggling compared to the 50 incidents recorded in 2021.

MONTH-TO-MONTH COMPARISON OF INCIDENTS IN 2022



FACT: There was a 118% increase in Domestic Products Smuggling compared to the 50 incidents recorded in 2021.

3. OBSERVATION/ASSESSMENT

The incidents **off the waters of Malaysia** accounted for approximately 23% of all CS incidents reported. This is likely due to an increase in the smuggling of Fuel Products (26 incidents) such as Petroleum, Gasoline and Diesel. A high demand for Diesel and Gasoline has led to the increase of smuggling activities due to the increased global oil prices. However, Drug Smuggling has increased due to the high demand of drugs in Indonesia, which has brought more smuggling activities from the Golden Triangle. The Indonesian Government banned the export of homemade Cooking Oil to the global market, which led to the increase of Domestic Products Smugglings. Of note, the IFC observed a new modus operandi for Drugs Smuggling, which involves the tying of packages to vessels’ parts below the water, also known as ‘Underwater Operations’.

IFC has also recorded an incident increase in the **waters off the People’s Republic of China** in 2022, including the Hong Kong Special Administrative Region, with the 60 incidents recorded constituting a 300% increase in comparison with the 15 incidents recorded in 2021. The increase may be attributed to the activeness and frequency of reports by the local media, as information on the majority of the incidents was obtained from open-source media reporting. Most incidents recorded off the waters of China in 2022 were related to

Domestic Products, Natural Resources, Drugs, Tobacco, Wildlife, and Fuel smuggling.

Drug smuggling via maritime routes within the IFC AOI increased in 2022. As with past years, **Cannabis** smuggling, predominantly in the waters off Sri Lanka and India, constituted the majority of all Drug Smuggling incidents. The IFC recorded a monthly average of 2025 kg of drugs seized so far in 2022.

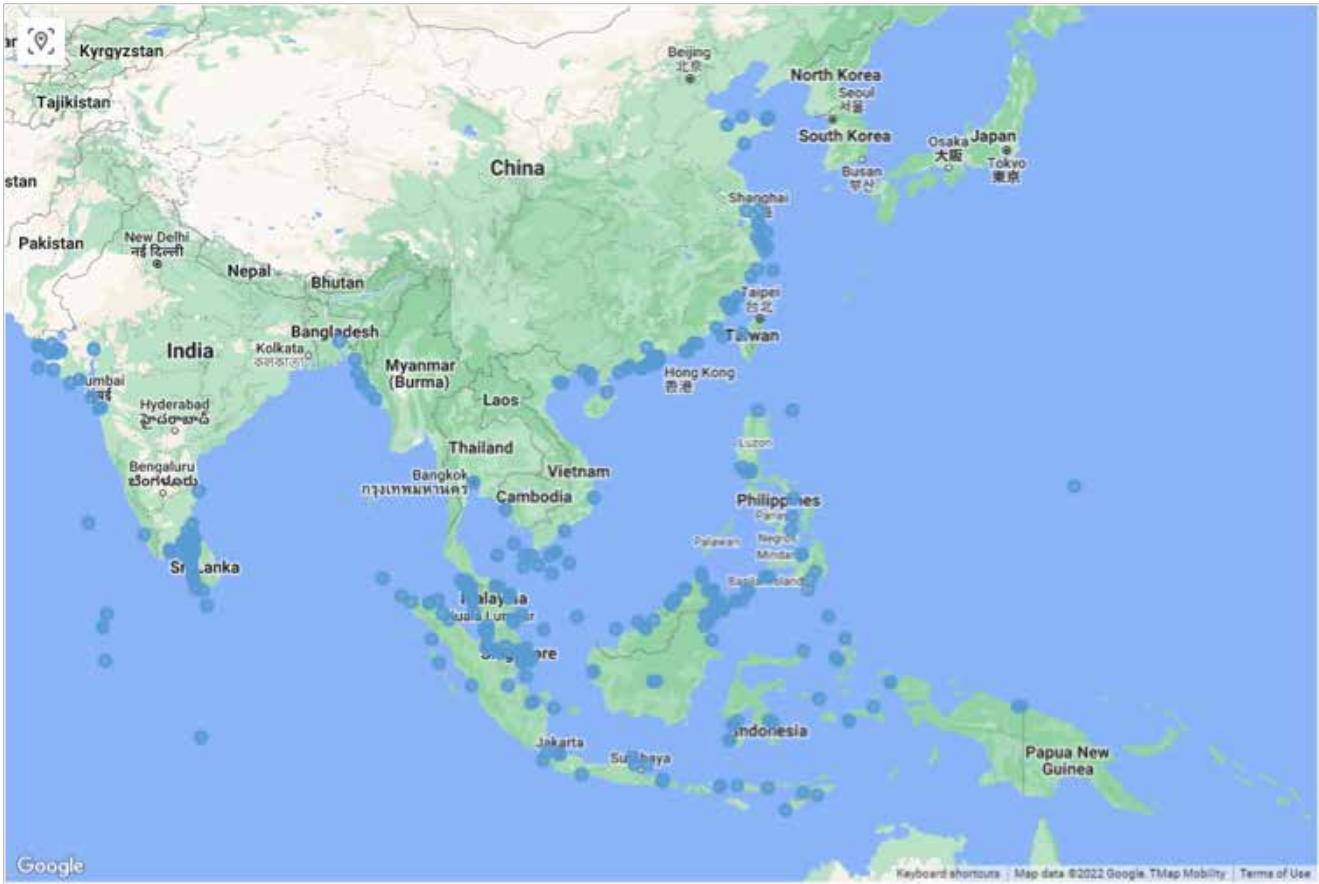
An increase in **Methamphetamine** seizures in waters off Malaysia, Thailand and Indonesia has occurred since the beginning of the year with a monthly average of 408 kg, with large seizures made sporadically in January, February, March and April 2022. **Ketum leaves** smuggling was popular in this region, with the biggest seizure of 2.2 tonnes reported in Malaysia.¹

Heroin smuggling incidents occurred mostly at the High Seas, transiting from Afghanistan, and Pakistan to India, Sri Lanka, and Java in Indonesia. Both the Indian Coast Guard and Sri Lanka Navy have leveraged on higher technology surveillance and increased intelligent sharing among the law enforcement agencies. **Cocaine** smuggling was limited to incidents reported in Hong Kong, Indonesia, Philippines and Sri Lanka; the biggest seizure was 350kg of cocaine in Sri Lanka.



¹ **Ketum leaves** have been used traditionally for good health and as an energy boost to do heavy jobs. They have also been used as traditional medicine to treat ailments such as back pain, fever, cough and worms, as well as diseases such as diabetes and high blood pressure.

LOCATIONS OF INCIDENTS



4. FORECAST

The IFC expects the number of CS incidents in the second half of 2022 to remain within similar levels reported in the beginning of 2022, especially if the global economy is unstable, and enforcement efforts persist.

Assuming the current enforcement operations by maritime authorities continues, the waters off Malaysia and Indonesia will likely record an average of 26 incidents per month. For Drug Smuggling, heroin production in Afghanistan flowing through Iran and Pakistan into India may result in an

increase in the frequency and quantity of seizures; if so, and left unhindered, this might contribute to higher CS numbers. It is likely that we will continue to observe changes in smuggling tactics, such as perpetrators employing new vessel types or concealment techniques which can potentially challenge enforcement agencies’ ability to detect and apprehend contraband smugglers. However, enhancing regional information sharing could provide law enforcement agencies and maritime authorities’ greater awareness and insights into contraband smuggling activities.

THE THREAT FROM DRUG SMUGGLING
BY THE INTERNATIONAL CHAMBER OF SHIPPING

Merchant ships present an ideal target for drugs traffickers to smuggle narcotics globally. The scale of the shipping industry provides a target for high-volume movements of drugs from producing to consuming countries, with ships being used as mules within a highly sophisticated – and profitable – illicit supply chain. It is a crime which shipowners and the International Chamber of Shipping treat with the utmost seriousness, and one which we strive to fight against through our advocacy at international level and through best practice guidance for operators and seafarers.

At a conservative estimate, the annual value of the narcotics market was valued at over US\$426b, equivalent to 30% of the yearly value of the entire global oil and gas sector. Drugs smuggling is a global enterprise, and no ports can be considered totally free of risk. Drugs smuggling has severe societal impacts, most notably in public health and law and order, and drugs money goes to fund other illegal activities, including terrorism. Consequently, it is a crime that draws severe criminal penalties in virtually all jurisdictions worldwide, with prosecutions resulting in long jail terms and, in some places, the death penalty. It is therefore essential that seafarers, shipowners and managers maintain the highest vigilance in face of the threat.

Merchant ships are targeted by drugs smugglers in increasingly sophisticated ways. Vulnerable crew members can be used to bring and stow drugs on board, and port personnel may be used to either bring drugs onboard during loading and unloading operations, or to place them in containers in port. Furthermore, smugglers may affix drugs to ships’ hulls, or in places that might avoid inspection.

As with all maritime security threats, preparation and vigilance is key. Operators and seafarers should be aware of ports with a higher risk of drugs smuggling, and also routes commonly exploited by traffickers. This is the first step in safeguarding against a ship being exploited for drug trafficking. Understanding

port security, specific security risks in certain ports and how security measures can and have been circumvented by criminals is also key to preventing access by traffickers, thus minimising the risk of being used as a vector for drugs.

Physical security measures and access controls defined in the Ship Security Plan (SSP) can similarly limit the ability of traffickers to get drugs onboard. Not allowing unexpected personnel onboard the ship, or taking on unexpected packages or deliveries are practical means of limiting access. However, these should not be taken for granted, given the many means by which smugglers exploit merchant ships, and thorough searches should therefore be conducted when in port to ensure that smugglers have not gained access and planted drugs onboard. Fundamental to this is an understanding of the methods they exploit in hiding drugs, and crew should be drilled in identifying suspect packages and the places in which they may be concealed. Similarly, awareness of the effects of drugs, and changes in behaviour of those who may be victims of substance abuse can be key in identifying whether a security breach has occurred, and whether vulnerable personnel have been exploited by traffickers.

Cooperation with the authorities is key, both in working to ensure that the ship does not fall victim to traffickers and in responding in the event that it does. Drug finds should be reported to the appropriate authorities at the earliest opportunity. Clear guidance should be provided to masters in the SSP regarding their obligations and responsibilities, mindful that in some countries, persons suspected of involvement can be detained in jail for the duration of the pre-trial investigation and the trial. In most countries, cooperation between the Master, crew and the authorities is usually understood to be effective in reducing trafficking, and mitigates the risk of becoming part of the criminal investigation.

John Stawpert is the Senior Manager (Environment and Trade) at the International Chamber of Shipping. The ICS publications *Drug Trafficking and Drug Abuse On Board Ship* and *Maritime Security: A Comprehensive Guide for Shipowners, Seafarers and Administrations* are on sale now at <https://shop.witherbys.com>.



IRREGULAR HUMAN MIGRATION (IHM)

1. OVERVIEW

IN THE FIRST HALF OF 2022, the IFC recorded a total of 137 incidents. The majority of IHM incidents were Human Smuggling, with transits from Indonesia to Malaysia. The number of Indonesians and Rohingya seeking to transit to Malaysia increased over the same reporting period in 2021. Malaysia remains the destination of choice for the majority of Human Smuggling activity in the region.

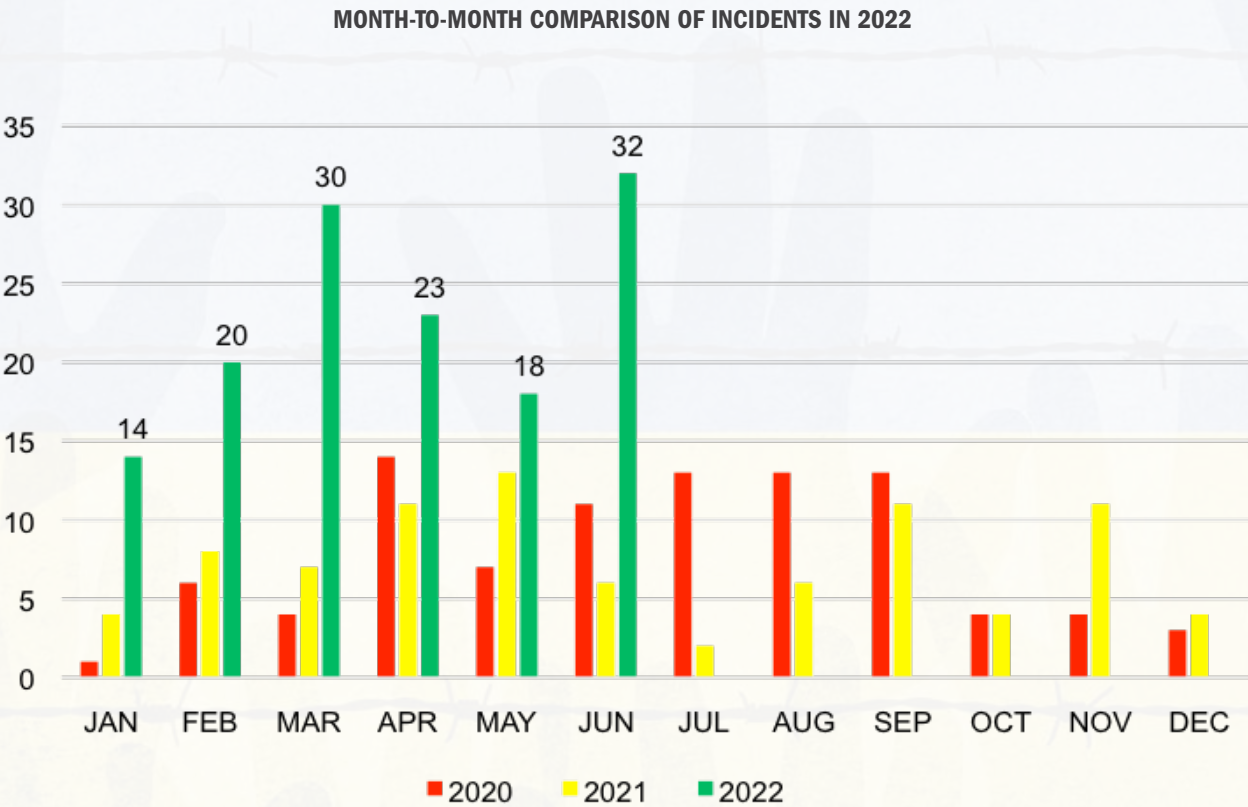
There was a notable increase in the number of Sri Lankan migrants, directly related to the deterioration of the economy in the country. The number of Sri Lankans using maritime routes to migrate is likely to increase throughout the remainder of 2022. Based on current figures and trajectory, the IFC expects the number of IHM incidents and migrants to exceed 2021 figures by a significant margin.

DEFINITIONS OF IHM CLASSIFICATIONS

IHM CLASSIFICATIONS (Types of smuggling)	EXPLANATORY NOTES
HUMAN SMUGGLING	When persons are implicit and wilful in their irregular/illegal migration (Based on economic; filial reasons; or migration associated with the UN definitions for Refugees, Asylum Seekers, Displaced persons and Stateless persons)
HUMAN TRAFFICKING	When persons are coerced and moved/migrated against their will (forced or deceived into doing so)
HUMAN EXPLOITATION	When persons are used, or currently working in the maritime sector, as a resource with no regard for their wellbeing (within the maritime domain) e.g. Slavery. Migration may not be an element in this classification
ILLEGAL DOCUMENTATION	When a person(s) is discovered working in a maritime industry without the necessary documentation, or authority to be working. The person(s) is not reported to being exploited but just working illegally.

2. KEY FACTS

The 137 IHM incidents reported between January to July 22 is already higher than the total numbers recorded for 2021 and 2020 by 50 incidents and 44 incidents respectively. Of note, June 2022 had the highest number of incidents recorded, accounting for 23% of recorded incidents.



Of the 137 IHM incidents recorded, 130 were related to Human Smuggling, making it the main area of concern. Incidents involving Invalid Documentation (seven) and Human Trafficking (two) accounted for the remaining seven IHM cases in the first half of 2022. There were no incidents recorded relating to Human Exploitation. The total number of people involved in IHM incidents also increased with 2769 identified in the first half of 2022 compared with 2487 reported for all of 2021.

Throughout the first half of 2022, 1283 Indonesians were identified in IHM incidents, predominantly transiting to Malaysia. Transits from Indonesia to Malaysia peaked in February and March with a total of 745 Indonesians involved in IHM incidents. More Indonesians were reported in IHM incidents in the first six months of 2022 than all of 2021. Human smuggling transit routes have been active across the Malacca Strait targeting eastern peninsular Malaysia, the eastern coast of Johor and south-eastern Sabah.

Consistent with observations in 2021, Malaysia remains the primary destination of choice for the majority of IHM activity, with 61% of all Human Smuggling incidents attempting a transit to Malaysia. IFC assesses that these migrants were most likely attempting transit to Malaysia for economic reasons and in some cases, like the Rohingya, to seek refuge in a country with a shared religion. A broad range of security forces within Malaysia responded to IHM incidents. Ten Malaysian law enforcement organisations and eight military units or commands were identified responding to IHM incidents at sea and ashore over the reporting period.

The transit of Rohingya migrants from Myanmar and Bangladesh into Southeast Asia remains an IHM challenge for the region. The number of Rohingya identified using maritime routes has increased compared to the previous year. In the first half of 2021, 195 Rohingya were identified transiting the region with another 571 reported in the final half of the year (total of 766). Within the first half of 2022, 563 were reported. If this trend from 2021 continues, there is likely to be an increase in Rohingya numbers in the last half of 2022, likely from late October or early November when the monsoon season ends, enabling safer maritime transits.

A total of 575 Sri Lankans were reported in Human Smuggling incidents attempting to transit to India and Australia, a significant increase on the 80 migrants reported in 2021, and the three in 2020. Starting in March, Human Smuggling incidents were reported along the south eastern coast of India and in the waters off Sri Lanka, with Sri Lankans attempting transit to India. The number of incidents and attempted destinations increased over the following months.

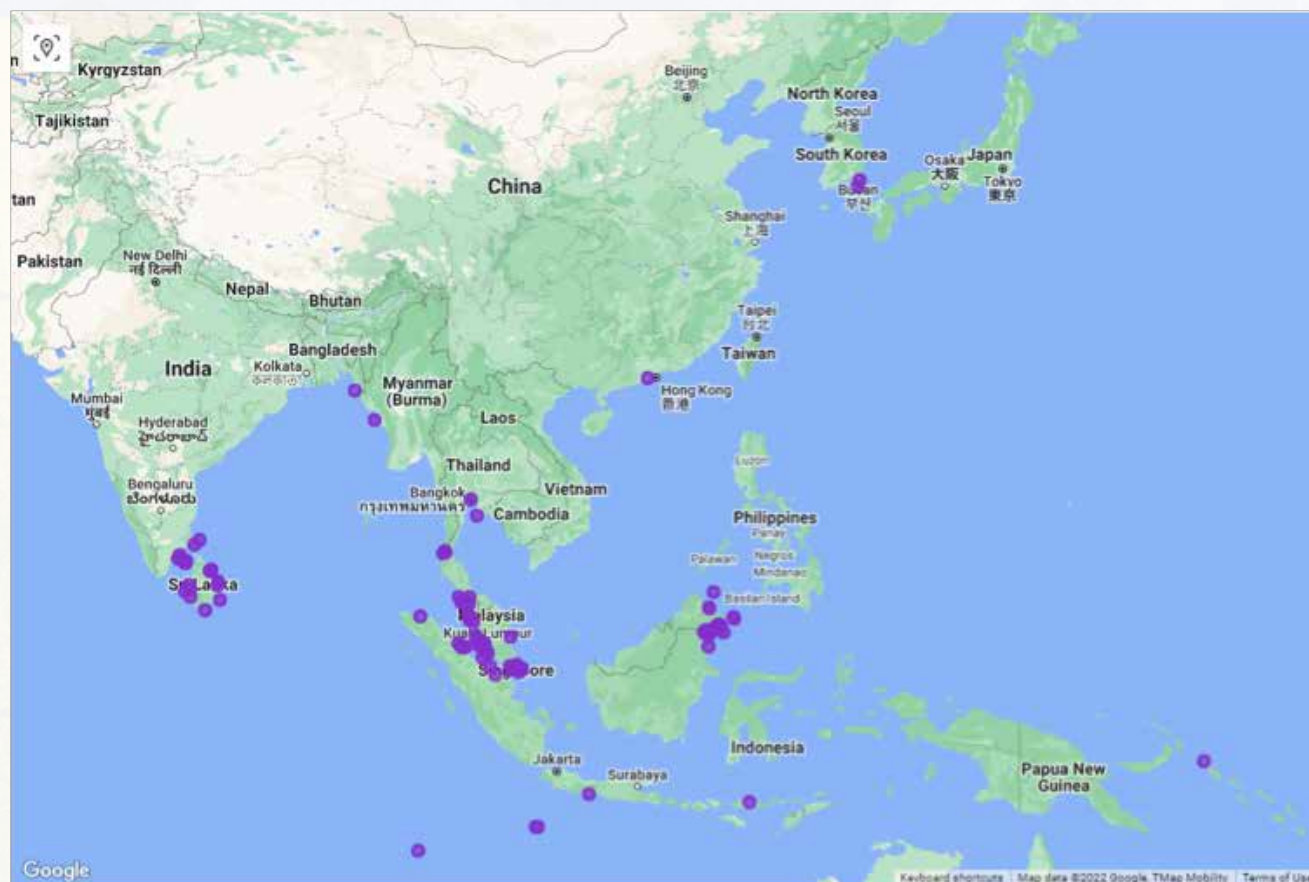
FACT: Consistent with observations in 2021, Malaysia remains the primary destination of choice for the majority of IHM activity, with 61% of all Human Smuggling incidents attempting a transit to Malaysia.

2. KEY FACTS cont'd

The number of Filipino migrants has also increased with 145 reported in the first six months of 2022, compared with a total of 139 in 2021. Compared to the previous year, there was a decrease in IHM incidents involving Indian, Vietnamese and Chinese nationals.

In 55% of the incidents recorded in 2022, migrants used small boats; fishing vessels were used in 18% of the incidents. The type of vessel used in IHM incidents is diverse, depending on the number of migrants, availability of vessels, weather condition, distance of transit and maritime industries at the point of departure. Due to limited information in reporting available to the IFC, unknown vessels were reported in 27% of IHM incidents. Small boats were most commonly used during shorter transits and transits at speed to elude law enforcement. Fishing vessels were identified in incidents carrying larger groups of migrants and transiting longer distances to their destination country.

LOCATIONS OF INCIDENTS



3. OBSERVATION/ASSESSMENT

The first half of 2022 witnessed an increase in the smuggling of Indonesians and Rohingya to Malaysia. This trend is likely to continue throughout 2022. The economic and employment pull factors drawing migration to Malaysia will almost certainly remain. Furthermore, the push factors, such as access to basic goods, communal violence and religious persecution, may drive further migration from Myanmar and Bangladesh into Southeast Asia.

The deterioration of Sri Lanka's economy and security situation is the catalyst for the increase of Human Smuggling incidents. Until the economic situation stabilises, Human Smuggling of small family units or larger groups facilitated by criminal syndicates will continue. Human smuggling ventures in Sri Lanka have demonstrated a capability to send vessels as far as Australia. Previous Human Smuggling syndicates have attempted to target countries outside of Asia, as far as North America. It is possible that Human Smuggling syndicates may seek to send vessels from Sri Lanka on longer, more dangerous voyages, putting the lives of migrants at risk.

4. FORECASTS/WAY AHEAD

The majority of IHM movement will likely remain across shared maritime borders, particularly between Indonesia and Malaysia. However, the economic situation in Sri Lanka and Maritime IHM incidents will almost certainly increase beyond 2021 migrant numbers. 2022 is likely to record the largest number of incidents and possibly migrant numbers, since the IFC started recording IHM data in 2016.

Conditions still exist for large numbers of people to attempt migration through maritime routes throughout the Indo-Pacific region. The continued displacement of minorities, a state on state conflict, civil war, and an increase in communal violence, extreme weather events, and the deterioration of government services or pandemics may be catalysts for the migration of people throughout the IFC Area of Interest in 2022.

The IFC advises all shippers to report any sighting of vessels with unusually high numbers of personnel on board to local authorities and to be aware of VCR messages which may contain IHM reporting.



ENVIRONMENTAL SECURITY (ENVSEC)

1. OVERVIEW

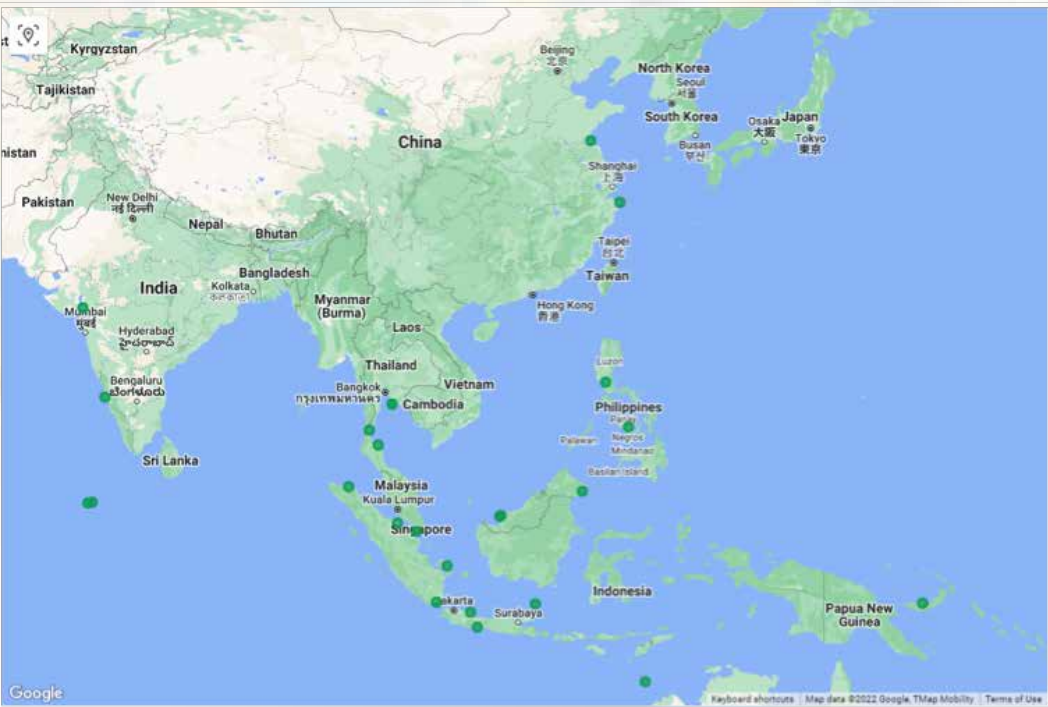
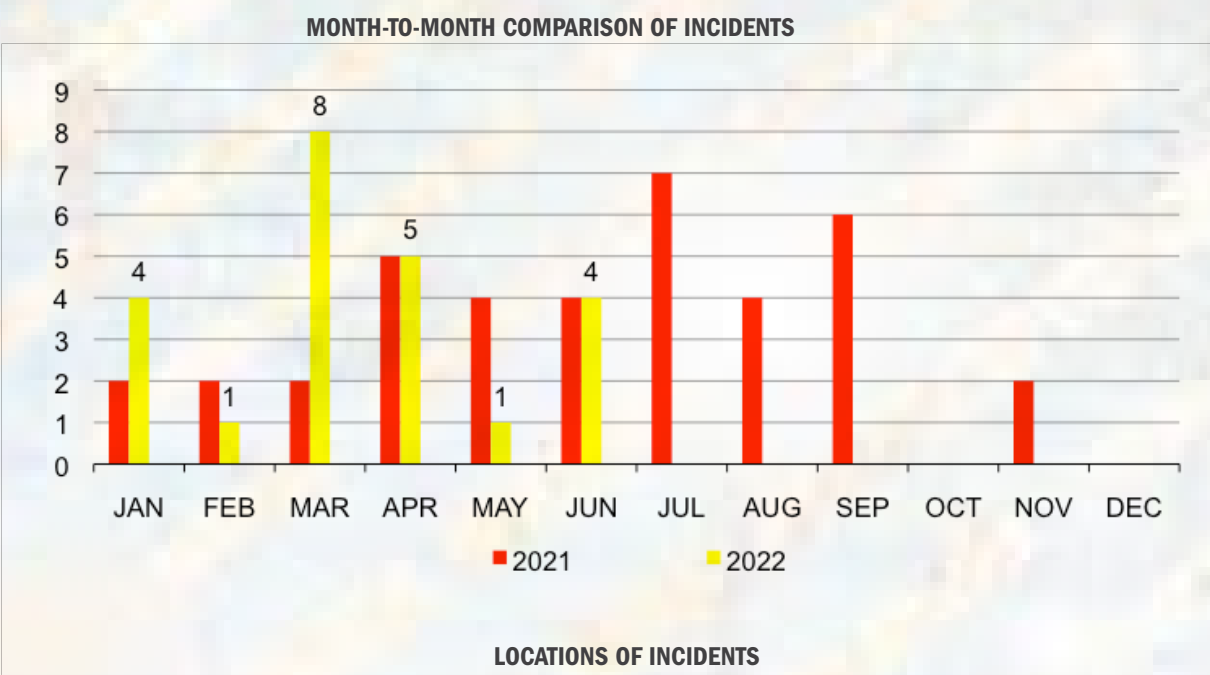
From January to June 2022, a total of 21 ENVSEC incidents were recorded in IFC AOI. Fourteen out of the 21 incidents (66.7%) were Maritime Pollution (MARPOL) consisting of liquid and solid pollution, making up the majority of the incidents, followed by the Others classification with four incidents (19%). In terms of contagion, there was a decreasing trend from four incidents to one incident compared to the same period of 2021. This might be due to the reduced impact of COVID-19 which corroborated with the relaxation of COVID-19 restriction in Asia. If circumstances remain unchanged, the IFC expects ENVSEC incidents in the latter half of 2022 to remain similar to the earlier half.

DEFINITIONS OF ENVSEC CLASSIFICATIONS

ENVSEC CLASSIFICATIONS	EXPLANATORY NOTES
MARITIME POLLUTION (MARPOL)	Refers to Liquid pollution (Oil spills, discharge/leakages, or sewage), Air pollution, and Solid pollution (illegal discharges of waste, garbage, plastic, etc.) which includes records of violation onboard (such as oil blending), and noise pollution.
MARITIME ILLEGAL EXPLOITATION (MIE)	Exploitation of oil and gas, flora, biological, and mineral resources (nodules, etc.)
CONTAGION	Transmission of viruses through maritime means.
OTHERS	Any maritime ENVSEC incident that does not explicitly fall into the other classifications such as, but not limited to, harmful or fatal incident of marine life, etc.

2. KEY FACTS

March had the highest numbers recorded, accounting for eight out of the 21 incidents recorded in the first half of 2022. MARPOL consisting of liquid and solid pollution accounted for 14 incidents. Four incidents (19%) fell within the Others classification, with incidents involving Breach of Wildlife Act, damage reef, and non-compliance of regulation.



3. OBSERVATION/ASSESSMENT

Nine of 14 MARPOL incidents were due to liquid pollution; they were caused by oil spill and leakage that occurred in Indonesia, Thailand, Papua New Guinea and India, while the remaining five of 14 MARPOL incidents were due to solid pollution, which were (a) dumping of waste in waters off China and also Maldives, and (b) coal from a stranded barge in waters off Indonesia. The second large number of classification was reported as others in four incidents (19%) which involved Breach of Wildlife Act in both India and Malaysia, damage reef in Maldives and non-compliance of regulation in China. MIE recorded two incidents (9.5%) by illegal sea mining activity in both Indonesia and Malaysia.

4. FORECASTS/WAY AHEAD

The IFC assesses that liquid pollution will continue to be the main contributing factor for ENVSEC incidents in the second half of 2022. The IFC encourages all seafarers to continue to observe proper processes to prevent oil spills and leakages. Timely reporting to local authorities is critical in combating ENVSEC threat to prevent deterioration of not only environment but also ecology if instantaneous and effective response can be carried out.

The IFC encourages all seafarers to continue to observe proper processes to prevent oil spills and leakages. Timely reporting to local authorities is critical in combating ENVSEC threat to prevent deterioration of not only environment but also ecology if instantaneous and effective response can be carried out.

MARITIME CYBER SECURITY (CYBSEC)

1. OVERVIEW

From January to June 2022, there was only **one** Cyber Security (CYBSEC) incident recorded in IFC's AOI. The IFC expects the number of CYBSEC incidents in the second half of 2022 to remain low as long as the maritime industry continues to place emphasis on cyber security measures and improve cyber defence efforts.

2. OBSERVATION/ASSESSMENT

This is the first CYBSEC incident reported in the IFC's AOI. The incident occurred at Jawaharlal Nehru Port Container Terminal, which is one of five container terminals in India's largest container port. The container terminal accounts for half of all the containers handled in India. This incident reportedly caused the port to turn away ships to the other terminals in the complex located near Mumbai after suffering what is believed to be a ransomware attack on its computer systems. The attack did not leave any information on the perpetrator and no motives can be found so far.

3. FORECASTS/WAY AHEAD

The IFC expects the number of CYBSEC incidents in the second half of 2022 to remain low as long as (a) organisations continue putting emphasis and increasing education on cyber-attacks, (b) organisation are equipping and enforcing defence against cyber-attacks.

IFC will continue to maintain observation on cases that are relevant to Maritime CYBSEC.



A CASE STUDY OF NATION ATTACK ON SHIPS

By CyberOwl

In February earlier this year, as Russia was launching its campaign against Ukraine, we at CyberOwl were on heightened alert for nation state cyber activity across the fleets of vessels we monitored. On eight vessels that we had newly deployed our technology, we immediately detected malware that was closely associated with political espionage.

Across these eight vessels, we found the same variant of malware. On further investigation and reverse engineering, we determined that this was a variant of malware belonging to the PlugX family, which was first discovered in 2020. It was designed to provide the attacker remote access to the affected system, followed by full admin control of the machine without permission or authorisation. This includes the ability to take screenshots, manipulate files, execute commands, change processes and spread locally; pretty much full command and control of the affected machines.

These findings piqued our serious attention for a few reasons:

- **The malware had found its way onto both IT and OT.** This includes Operating Technology that controlled critical vessel systems, assumed to be “air gapped”. In this case, there was no particular evidence of the attackers having assumed control of the OT systems. Fortunately,

CyberOwl had uncovered the malware before internet connectivity had been established on the affected OT systems.

- **The shoreside team, crew and ship owners were oblivious to the presence of the malware.**

The malware had evaded advanced antivirus software in place on some of the affected machines. The most likely explanation was that the malware was not detected by a previous, outdated version of the antivirus software. The stealthy nature meant that there were no anomalies that crew nor visitors had spotted with the naked eye. To make matters worse, the shoreside team did not have access to any logs or visibility of suspicious behaviour from the malware. It is unclear how long the malware had been sitting on the affected machines, awaiting an internet connection.

- **Multiple vessels from multiple fleets with the same malware.** The malware variant was identical across all eight vessels, which were different vessel types, owned and operated by different ship managers. Our analysis suggests the malware was transferred via USB sticks in circulation amongst connected individuals e.g. they work for the same vendor or visited the vessel from the same port. While there was no evidence of this being a targeted attack, it points to the possibility of systemic attack from a single actor.

The fact is discovering malware or cyber attacks on shipping systems is not exactly a rarity. In a recent report that CyberOwl commissioned, involving a survey of c.200 shipping professionals, 36% believe their organisation had been a victim of a cyber attack in the last three years.

3% of those affected resulted in ransom payments with an average of US\$3.1M. By contrast, the average ship operator spent less than US\$100k per annum on cybersecurity in the last 12 months. Put another way, for every \$1 the cyber criminals gained in ransom, the affected ship operator spent an average of only 3 cents on cyber risk management.

This paints a very different picture to the investments the maritime sector is willing to make to mitigate piracy risk. For every US\$1 pirates steal or extort in Africa, for example, US\$524 is spent on counter-piracy measures¹.

Given the maritime trends of increasing connectivity, digitisation, the increasing threat landscape, as well as the potential for loss of life, cargo and operational disruption, this doesn't add up. It points to a great disconnect between the risks that shipping operators are exposed to and the protections they currently have in place.

For further details on the incident above, the great disconnects in cyber risk management in shipping and key recommendations for the sector, CyberOwl commissioned an independent report in collaboration with Thetius and HFW. You can find a copy here: <https://cyberowl.io/resources/global-maritime-industry-report-the-great-disconnect/>

¹ See the report of a study by Stable Seas, a transnational maritime security research organisation.

“The fact is discovering malware or cyber attacks on shipping systems is not exactly a rarity. In a recent report that CyberOwl commissioned, involving a survey of c.200 shipping professionals, 36% believe their organisation had been a victim of a cyber attack in the last three years. 3% of those affected resulted in ransom payments with an average of US\$3.1M.



SURVEY RESULTS AND SUMMARY OF KEY FINDINGS

192
RESPONDENTS



52%

of industry professionals believe their organisation has a process in place for gathering intelligence on cyber security threats.

36%

of industry professionals believe their organisation has been the victim of a cyber attack in the last three years.

BREAKDOWN BY SENIORITY ASHORE:

44% OF EMPLOYEES IN OPERATIONAL ROLES

37% OF EMPLOYEES IN MANAGEMENT ROLES

19% OF EMPLOYEES IN LEADERSHIP ROLES

3% of cyber attacks resulted in the respondents' organisation paying a ransom.

\$3.1 MILLION

...is the average ransom paid

73%

of respondents believe their organisation has a cyber security incident response plan.

BREAKDOWN BY DEMOGRAPHIC:

90% OF SHORESIDE PERSONNEL AT SHIPPING COMPANIES

71% OF SEAFARERS

55% OF INDUSTRY SUPPLIERS

61% OF SENIOR LEADERS

34%

of industry professionals believe their organisation has insurance in place to cover cyber attacks.



Thetius - HFW - Cyberowl | The Great Disconnect 19

"We regularly conduct cyber security training and drills in my organisation."

83% of shoreside employees at shipping companies agree with this statement but only...

67% of seafarers agree.

54%

of shipping companies spend less than \$100K per year on cyber security management.

"My organisation has appropriately addressed cyber risks in the fleet's safety management system."

87% of seafarers and shoreside employees at shipping companies agree with this statement.

\$182,000

An average, cyber attacks cost ship operators \$182,000 per year.



For 1 in 12 ship operators (8%), the average cost of cyber attacks is:

\$1.8MILLION PER YEAR



INFORMATION FUSION CENTRE

Head Office

103 Tanah Merah Coast Road
#02-01, Singapore 498750

Phone

+65 6594 5705

Fax

+65 6594 5734

Mail

lfc_do@defence.gov.sg

Web

www.ifc.org.sg

Website

<https://www.ifc.org.sg>

Telegram

http://bit.ly/Information_Fusion_Centre

Twitter

https://twitter.com/Info_Fusion_Ctr