



IRCLASS
Indian Register of Shipping

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TOUCH OF CLASS







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Message from the Executive Chairman's Desk

Dear All,

It gives me great pleasure to communicate with all of you once again through our publication – Touch of Class. The last 16-18 months have been truly testing times and no one has escaped the rigours of the pandemic. Yet it has provided us with great learnings; some of which we will remember for the rest of our lives. The world is learning to cope up with this unprecedented situation and safety of life has emerged as a topmost concern. As we gradually emerge from this difficult period, we look forward with hope and aspire for better times ahead.

On the business front, IRClass has continued to grow despite the impact of many restrictions and inclement business conditions. We have ensured that business is conducted in the safest possible environment for our employees by enacting necessary policies and ensuring adherence to all safety protocols.

Pandemic challenges notwithstanding, the global maritime sector continues to rapidly adapt to changes in the regulatory realm and is gearing up to achieving IMO's decarbonisation goals. This represents a huge opportunity for the industry to demonstrate its commitment towards climate change. Being the primary transport means of global trade, it is incumbent upon the maritime industry to embrace this change. The recent developments in technology can act as catalyst in enabling these changes.

IRClass too is rapidly adopting technology and has established a dedicated team to develop digital solutions. IRClass is pro-actively assisting the ship owners / managers in achieving compliance through constant development of new services.

Considering that the vaccination is gathering pace in various countries, we hope that the world will soon be back to normal. With that positive note, I wish you all good tidings and best wishes for a brighter tomorrow.



MANAGING DIRECTOR'S MESSAGE

Dear Reader,

IRClass is positioned as a key maritime stakeholder within the safety and quality domain. It gives me happiness to share that IRClass has maintained a continual growth path for the past few years. Despite the pandemic induced challenges, we have seen sustained growth while maintaining quality. Our global coverage continues to grow significantly as we seek opportunities in new geographies. IRClass is recognised by a large number of Maritime Flag Administrations who collectively represent more than 55% of the global fleet.

To further strengthen our research capabilities, we have recently bifurcated our 'Research & Innovation Centre' into two independent divisions – 'Rule Development Associated Research & External Affairs' and 'Research & Development'.

We continue to support IMO's decarbonisation initiatives and are focussing on developing new services to assist owners and managers to meet new and upcoming regulatory requirements. We are currently working on hydrogen fuel cell powered vessels and other alternate fuels such as methanol and biodiesel. We have been involved in new construction of solar powered ferries and are also in the process of certification of Li-ion battery systems during their manufacture.

Owners have recognised the significance of data analytics and increasingly view digitalisation as an enabler in achieving their decarbonisation goals. Towards this IRClass has recently introduced IRClass Digital solutions through a tie up with Smart Ship Hub, based in Singapore.

It is our considered view that in the future we will see more autonomy, connected ships and greatly increased shore-based decision support systems. IRClass will continue to work with the industry to extend its support in validation and approval of new technologies, undertaking risk-based inspection, using data analytics for improving operational efficiency as well as certification of new age and cyber safe ships.

In the constantly changing regulatory and technological landscape, the significance of training and skill upgradation for both Surveyors and sailing staff as well as shore-based staff cannot be overstated. IRClass Academy has contributed to bridging the skill-gap by conducting several training courses. E-learning modules have ensured that the training is imparted to a larger audience with no geographical restrictions.

Our Surveyors undergo several training programs on a regular basis to strengthen their skillsets and capabilities to stay abreast in the ever-changing maritime environment.

While the role of class is constantly evolving with time, promoting the safety of life at sea, protection of property and marine environment would continue to remain our strongest focus area. IRClass aims to work with the industry to comply with international regulations using technology as an enabler and is committed to be a partner in industry's decarbonisation and digitalisation initiatives.

From the Editorial Board

Technology has become an integral & imperative part of our life. Maritime Industry is no exception, with Decarbonisation and Digitalisation being the focus requiring deployment of technology.

IMO MEPC 76 adopted amendments to MARPOL Annex – VI, as part of short-term measures under IMO GHG reduction strategy, which has introduced Energy Efficiency Existing Ships Index (EEXI) & Carbon Intensity Indicator (CII).

The new measures will require all ships to calculate their Energy Efficiency Existing Ship Index (EEXI) following technical means to improve their energy efficiency and to establish their annual operational carbon intensity indicator (CII) and CII rating.

Existing vessels have to demonstrate compliance by the annual, intermediate or renewal IAPP survey whichever comes first after 1st January 2023. This may require vessels to improve overall efficiency by other means including reduction of resistance, recovery of energy and/or flow into the propellers. IRS is proactively assisting the owners in both EEXI & CII.

Adoption of technology has its own challenges, not only in terms of development and implementation, but also protection of data and other associated risks. These risks need to be identified and mitigated to avoid occurrences of major incidences. We at IRS, are assisting the industry, in general and maritime sector in particular, on various aspects of Cyber Risks Management. A brief of our efforts has been included in this edition.

Covid has been a dampener in all the activities over last one and half years and has made life difficult to all, including ship surveying. IRS Surveyors have ensured that no ship is delayed, despite difficulties, including multiple Covid testing to enter ports and having to endure long periods of quarantine. Our field Surveyors have been ably assisted by the Plan Approval and Certification personnel working from office & home, with the sole aim of ensuring that shipping operations are not adversely impacted. We sincerely hope that this phase will soon pass and the world will be back on course.

We have tried to cover few aspects of the above in this Touch of Class and we are sure you will enjoy reading, as much as we have enjoyed putting it together for you.

- Editorial team



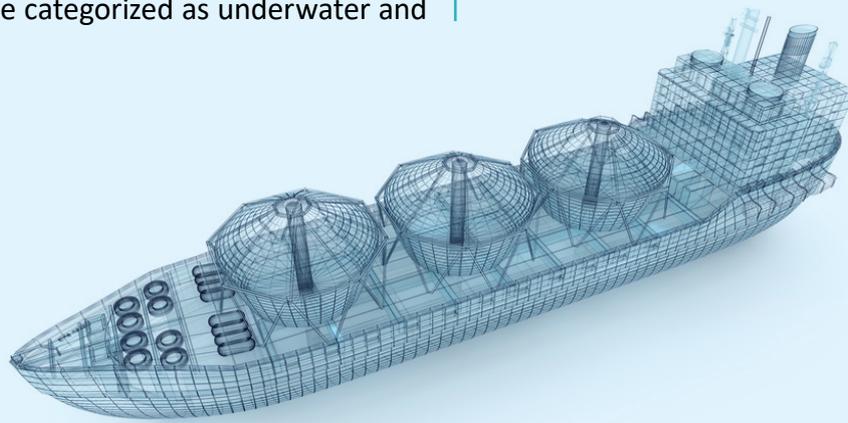
Signature Studies for Naval Vessel

Sharad Dhavalikar, Principal Surveyor



Signatures of a naval ship are crucial information to safeguard the ship from any external threat. These are stealth related operational information that signifies the capability of the vessel to camouflage from any detector and remain invisible to operate safely. The ship's acoustic, magnetic, radar, infrared, pressure and electric signatures help in estimating the vulnerability of the ship to these numerous threats from enemy. These signatures can be categorized as underwater and

above water signatures. The underwater signatures are the electric, magnetic and acoustic signatures which constitute the low frequency zone and the above water includes the high frequency radar cross section and infrared signatures. Estimation/prediction, management and reduction of these signatures makes the ship undetectable and survivable at sea.

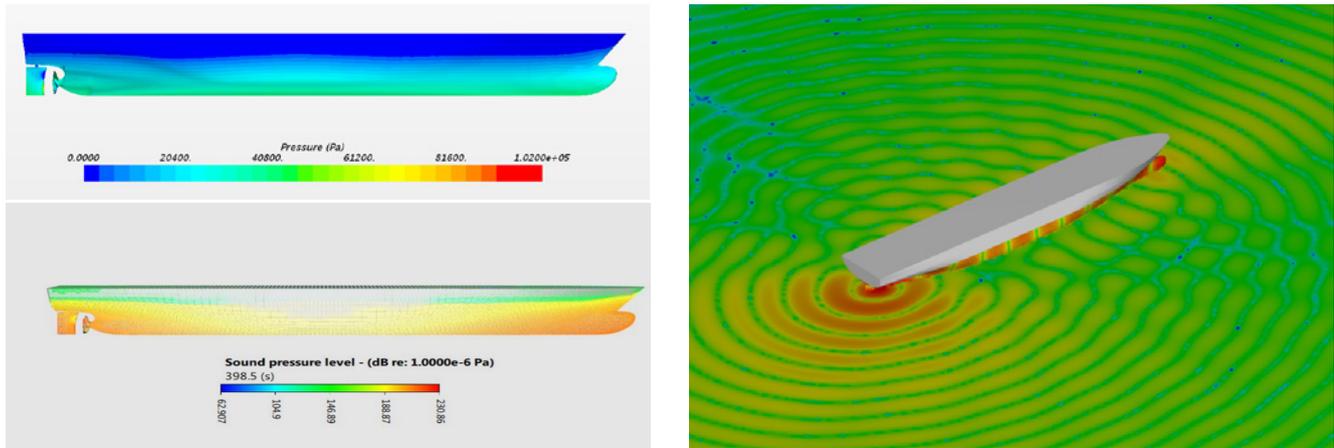


Various numerical techniques are used for predicting signatures of the vessel. Following table summarizes the signature prediction methodologies used by IRClass.

Signature	Methodology (& analysis involved)	Measures for reduction
Acoustic: Underwater Radiated Noise (URN)	Finite Element method coupled with Perfectly Matched Layer Technique (FE-PML)	Structural modifications to improve foundation impedance; Minimizing source level noise
	Computational Fluid Dynamics (CFD)	
	Boundary Element Method (BEM)	
	Statistical Energy Analysis (SEA)	
	Equipment Foundation Analysis	
Magnetic	Computational Electromagnetics (CEM) coupled with Finite Element Method (FEM)	Degaussing
	Effect of material used for hull and equipment is studied, vessel motion effects are also accounted	Deperming also is the alternative, however, cannot be assessed with numerical methods
Electric	Computational Electromagnetics Method (CEM)	Optimum anode position and current through anodes
Radar Cross Section (RCS)	Computational Electromagnetics Method (CEM)	Modifications in superstructure plating
		Applying radar absorbing materials, paints

The methods listed for reduction of the signatures are also dealt by the numerical techniques.

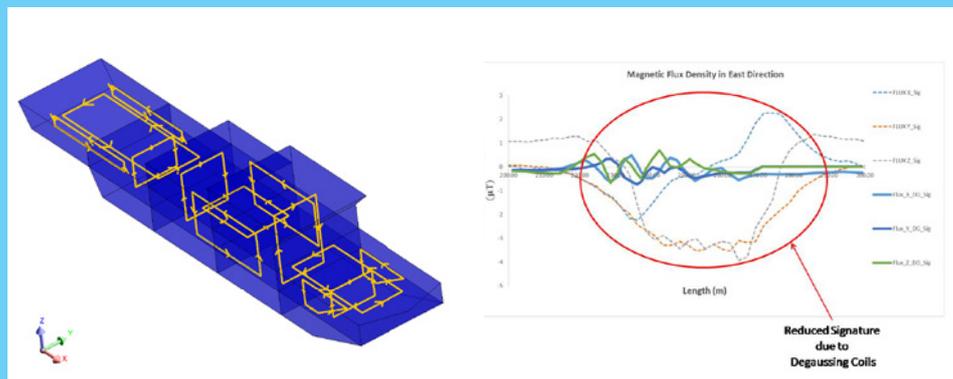
Following figures show sample cases of underwater radiated noise due to propeller predicted using CFD and BEM methods. These methods assist in assessing URN due to Blade passing frequencies, effect of hull and rudder surface on noise and evaluating various propeller designs in context with radiated noise.



Hydrodynamic and sound pressure on the hull, propeller and rudder (left); URN propagation pattern (propeller noise) (right)

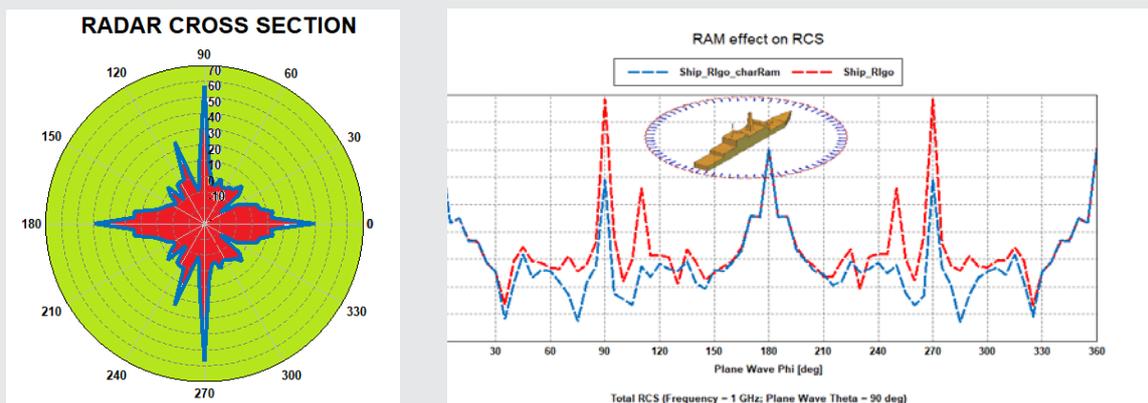
Prediction of magnetic signature and effect of degaussing on the signature is shown in below figure. IRClass has further utilized these CEM based techniques to investigate the effect of ship motions on magnetic signature by assessing induced eddy currents.

Degaussing coils on a sample ship and reduction in signature due to degaussing coils

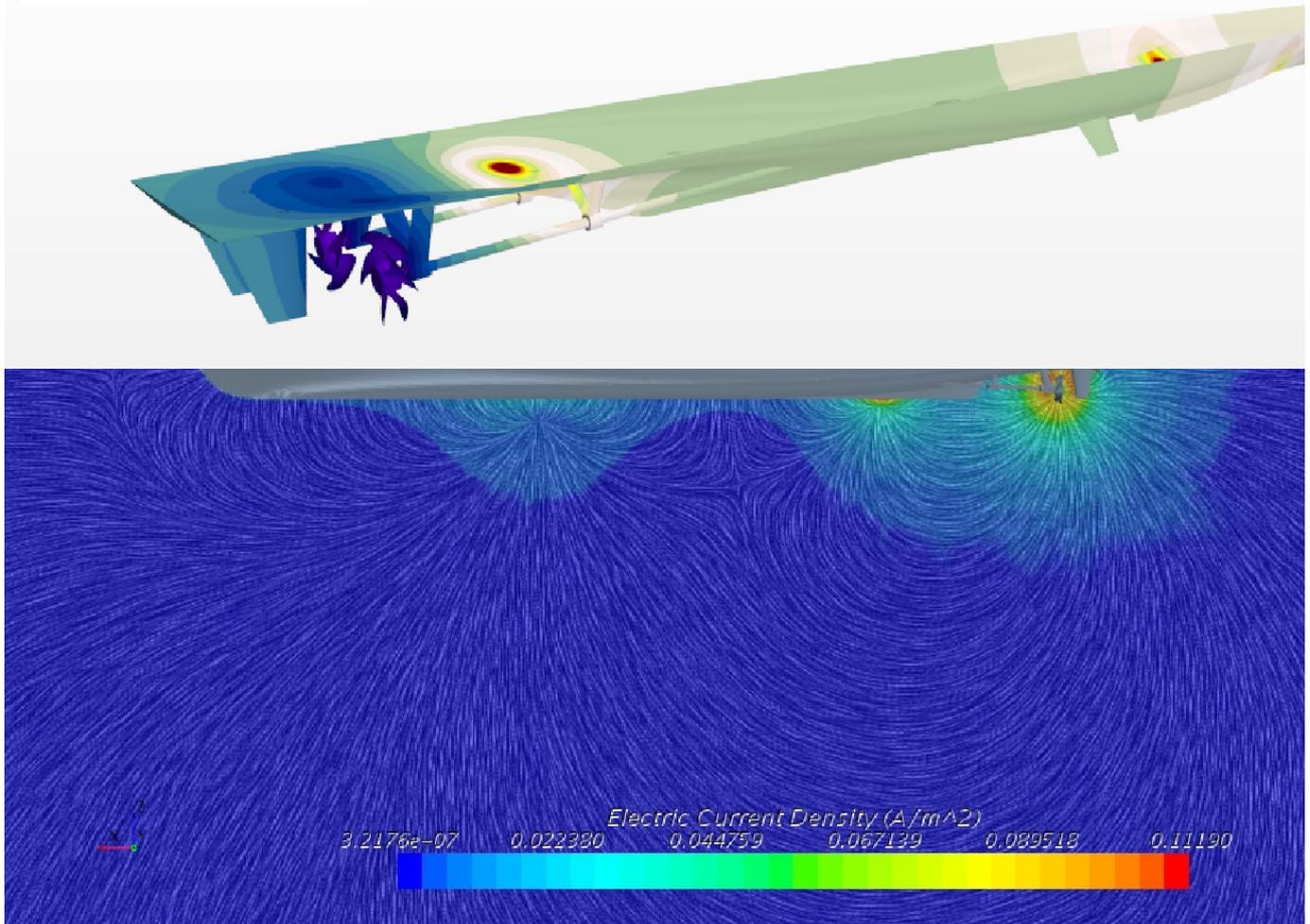


Effect of Radar Absorbing Material (RAM) on Radar Cross Section (RCS) is assessed for a sample case as shown in below figure. Contribution due to particular region of the superstructure is assessed by hotspot identification. Accordingly, IRClass has explored the effect of changing plate orientations of the superstructure to reduce hotspots and RCS.

RAM effect on RCS



Electric potential on the hull surface and the underwater magnetic field (or electric field) due to ICCP (Impressed Current Cathodic Protection) systems is shown in below figure. Optimization of anode location and the magnitude of current passing through anodes is arrived based on CEM based simulations. Effect of dissimilar materials of hull, propeller and rudder is assessed in these studies.



ICCP simulation: Electric potential on the hull surface & underwater electric current

Signature management is most effective if it is incorporated as an integral part of vessel design. Requirement of signature management emanates from the need to assess threat perception of the platform from sensors sensing its emitted signatures and to build in adequate stealth during design to avert the threats.

Application for Merchant Vessels

Techniques used for signature prediction such as CEM methods are used in analysing ICCP systems for commercial shipping (container vessels) as well. Similarly, with growing concern for environmental impact of commercial shipping predictions and minimization of URN for commercial vessels will become the essential part of ship design in near future. In this context minimizing URN will be the task for all ship designs.

More details on the signature prediction and related studies can be found in numerous technical papers by IRClass.

Maritime Cyber Risk Management in a Digitalised Environment



January 2021 can be considered as a milestone in maritime sector, as Maritime industry as a whole, geared up to secure ships from malicious cyber attacks through implementation of IMO resolution MSC 428(98).

In fact, many companies have taken the initiative quite some time back for the upcoming requirements. It is not new for maritime sector to prepare itself for new regulations, however the present regulation is in a comparatively less familiar area, cyber risk. Though industry has been using the cyber technology for its various operational systems, typically termed as OT systems for more than couple of decades, the focus was more on their usage, than on issues of cyber security, the later term being generally associated with information systems (IT systems).

The challenge is in collective pooling of efforts as it involves involvement of multiple disciplines from ship as well as from shore and requires close interaction, coordination between ship and shore staff in identifying cyber risks and suitable mitigating controls towards an effective cyber risk management.

There are different challenges faced by implementer while dealing with vessels of various ages. Older ships have fewer cyber systems as compared to

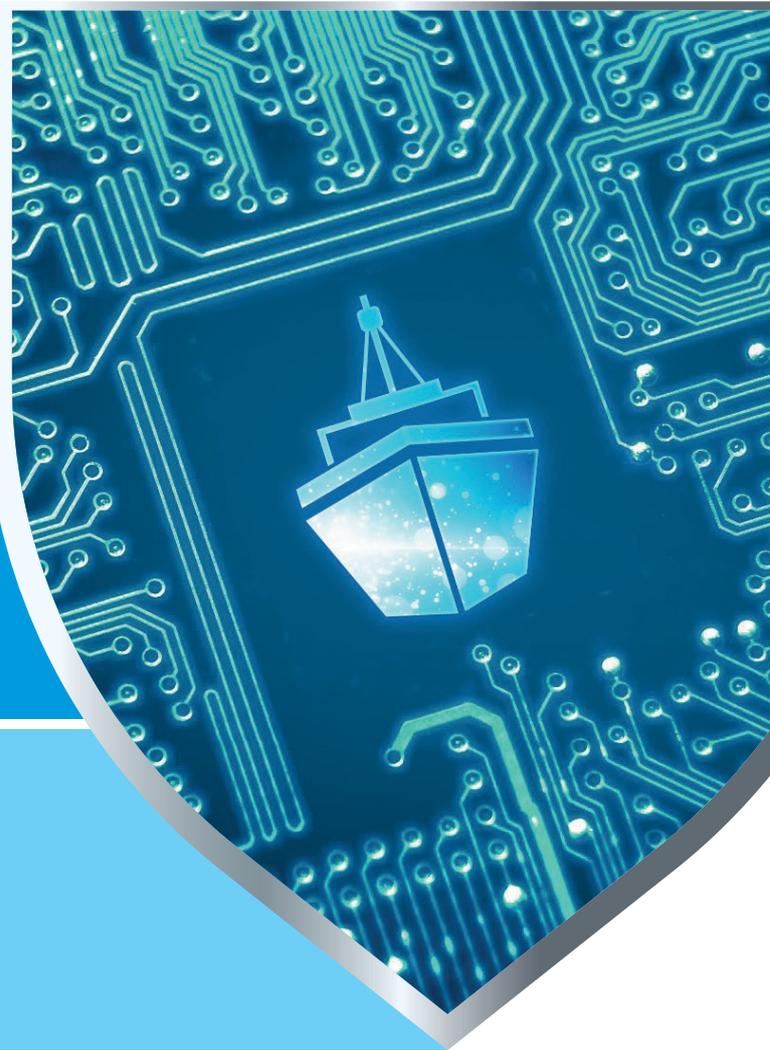
Mr. R Srinivas -
VP & Sr. Principal Surveyor



ships built in last 10 to 15 years. The challenge for older ships is in implementation of risk mitigating controls for legacy systems which were not designed with cyber security in mind. Even in ships built over last few years, while the new technology has made the companies and ships more innovative and efficient, at the same time vulnerability for cyber attack has increased, due to lack of sufficient cyber security controls for OT systems. Restrictive use of Vulnerability Assessment Tools (VAPT) for OT systems, limited documentation, shore connectivity are some of the additional challenges faced by the industry while trying to address cyber risks in existing vessels.

The basic principles of cyber risk mitigation measures remain same, however the solutions or the controls to mitigate risk could vary from ship to ship. In simple words, the controls, especially the technical controls are ship specific. Even with sister ships, over the years when systems are replaced, cyber risks can vary with newer versions of software and hardware and need to be addressed specifically.

Cyber Risks for Specific Types Of Ships



Studies have revealed that cyber threat is imminent for many vessels. Either they are hacked or likely to get hacked. The deciding factor is not on the difficulty in hacking but the gains after successful hack. It can be political, business related, financial gains or terror driven.

A recent report also indicated that the risk of loss or damage caused by a cyber crime will depend on the vessel type. The risk is higher for specialised or technically advanced ships engaged in oil and gas exploration. It has been noted that offshore supply vessels, drilling rigs and shuttle tankers could be targeted more than normal bulk carriers. This gets further complicated with extensive automation and specifically in remotely controlled and/or unmanned operations.

For a similar internal / external threats to onboard cyber systems, the consequences of a cyber attack will differ with type, size and location of a vessel. Given the sensitive nature of cargo and the fact that tankers represent 33% of world fleet and about 50% of the oil tanker fleet is about 10 years old, the probability of a cyber attack on tankers is high.

This has been proven by the fact that tankers have been attacked outside the strategically important Strait of Hormuz between the Persian Gulf and the Gulf of Oman. The vital waterway provides the only sea passage from the Persian Gulf to the open ocean and is one of the world's most strategically important choke points.

The company / owners should ensure that computer based systems on board ship and corresponding support infrastructure at shore are secured against cyber attacks.

The Challenges

Operational

The challenge for ships in operation is on implementation of controls to mitigate the risks with an objective that ships are able to operate and maintain their minimum working after a cyber attack. Given the limited cyber expertise on board, frequent crew changes and minimum shore support while at sea, the approach to handle such risks on board on ships shall be different as compared to land installations. It is essential to conduct initial risk assessment and periodical review whenever there is change in system hardware and software.

Legacy Systems

Implementation of cyber risk mitigation controls in existing vessels with legacy systems, which have minimum security features is challenging. It is not uncommon to find an engine control system without authentication controls and the issue can be addressed through implementation of counter measures such as installing a system with required security features in the network ahead of a legacy system.

Awareness and Training

Lack of cyber awareness and training continues to be one of the main causes for cyber attacks. Hacking through phishing is the single most threat faced by industries either on land or on sea. Hygiene, a word normally associated with cleanness from health perspective which has roots to ancient Greek Goddess of health Hygeia, is now a household name in pandemic. During pandemic, as more and more organisations and ships have fallen prey to spurious emails, a new type of hygiene, Cyber Hygiene surfaced. Training and constant awareness of new threats through information sharing is the only way of implementing Cyber Hygiene.

Cyber Risk Management

From a regulatory compliance aspect, IMO resolution MSC 428 (98) requires cyber risks to be appropriately addressed through ISM. In addition, tankers are required to comply with TMSA requirements. Tanker owners have the advantage that TMSA is more prescriptive and provides series of requirements. The two significant sections in TMSA 3 on change management at element 7 and cyber security at element 13 provide high level guidelines. In the process of cyber risk management, risk assessment is a crucial activity to be carried out before implementing controls.

Configuration Management

In contrast to earlier generation relay based control panels, where components were changed only when they were defective, the present generation PLC or embedded system control system panels may require software or hardware updates. Maintenance is not just limited to changing defective components but could be a software update also. A record of such changes are to be maintained and at the same time, desired system functionality should be ensured before the service engineer signs off.

Initiatives from Indian Register of Shipping (IRClass)

In addition to its role as Recognised Organisation (RO), IRS is providing following additional services in cyber risk management.



Rules, Guidelines and Certification

To assist the maritime industry in identification of cyber risks and design a suitable cyber risk management system, Cyber Safety Guidelines based on IEC 27001, IEC 62443 and industry best practices were developed by IRClass.

For new construction ships, use of appropriate cyber secured control system components is essential and towards the same IRS can certify such control system components when they comply with our Classification Notes on Certification of Control System Components. IRS also offers control system software certification service to verify software compliance with Guidelines on Certification of Software for Computer Based Control Systems.



Gap Assessment

Identification of existing gaps in technical and procedural controls is prerequisite to implementing new controls in an existing vessel. IRClass has carried out gap assessment for a leading tanker service provider. Our findings categorised in two groups - one group identifying policies and procedures, while the second group on controls, have helped the company in addressing onboard cyber risks.



Training

IRClass Academy conducts role specific cyber risk management training. Our awareness and training programs are interactive and are designed to provide clear understanding of associated risks and mitigating controls.

For more details, visit <https://www.irclass.org/marine/cyber-risk-management/>



Energy Efficiency Existing Ships Index (EEXI) & Carbon Intensity Indicator (CII)

Kunal Sharma - Surveyor



IMO's MEPC 76 adopted amendments to MARPOL Annex VI, as part of its short-term measures under the IMO GHG Reduction Strategy. New regulations have been introduced on Energy Efficiency Existing Ships Index (EEXI) and Carbon Intensity Indicator (CII). The amendments will enter into force on 1st November 2022 and the vessels will have to demonstrate compliance by the annual, intermediate or renewal IAPP survey whichever comes first on or after 1st January 2023.

Indian Register of Shipping (IRClass) is offering services related to the new regulatory requirements on Energy Efficiency Existing Ships Index (EEXI) and Carbon Intensity Indicator (CII). Through these new services, IRClass will assist

shipowners and managers in assessing the EEXI and CII of their vessels and determine compliance. Vessels will have to demonstrate compliance by the annual, intermediate or renewal IAPP survey whichever comes first on or after 1st January 2023, by preparing a comprehensive EEXI Technical File including calculations on Attained EEXI which must be equal to or less than the Required EEXI value set for that specific ship type and size as outlined by IMO.

In order to assist shipowners for achieving compliance to the above mentioned new regulatory requirements, IRClass has developed web-based electronic tool for calculation of EEXI, evaluation for compliance and preparation of EEXI Technical



File in the required format. It will be available on our existing web-based platform for SEEMP, data collection and reporting.

Further, for vessels which are not meeting the required level of EEXI, IRClass can advise on the reduction measures which could be:

- Engine Power Limitation (EPL)
- Fitting a bulbous bow based on operational profile
- Retrofitting duct around propeller
- Vortex generator fins / pre or post-swirl fins
- Propeller Boss Cap Fins (PBCF)
- Optimized propeller
- Alternative fuel

IRClass can provide estimations of energy efficiency improvement using numerical methods such as Computational Fluid Dynamics (CFD) analysis.

The Carbon Intensity Indicator (CII) is an operational measure and will be applicable to ships currently required to report fuel consumption data under IMO DCS, i.e., ships of 5000 GT & above engaged on international voyages. In addition to the current requirements of maintaining SEEMP Part I & Part II, Ships will now have to enhance their existing SEEMP (likely to be called Part III) by 1st January 2023. It includes a description of methodology to calculate ship's Attained CII, Required CII for the next three years, an implementation plan on how the required CII will be achieved for the next 3 years and a procedure for self-evaluation and improvement.

Based on the annual data collected, the attained annual operational CII will have to be calculated, documented, and verified against the required annual operational CII to determine operational carbon intensity rating A, B, C, D or E (A being the most superior). Ship rated as D for 3 consecutive years or rated as E, shall develop a plan of corrective actions to achieve the required annual operational CII.

IRClass will support the stakeholders in understanding and preparing the revised SEEMP and our electronic tool can be used to determine the attained and required CII and estimate the rating of the vessel. IRClass also provides

customized training to create awareness about the new regulations for shore and ship staff.

IRClass supports the IMO's initiatives and is committed to develop new services towards achieving the decarbonisation goals. Through these new services, IRClass can provide technical expertise to shipowners and managers in achieving compliance to the new regulatory requirements.

transformation comes from the impact it creates for the people consuming it, thereby enhancing commissioning, operations, maintenance and repair. The Smart Ship digital dashboard enables you to:

- Track, Monitor & Manage live vessel performance and take informed decisions
- Data gathered from the vessel during voyages give deeper insights into fuel utilized per voyage in a given weather condition, voyage metrics etc.
- Environmental performance

Smart Ship Onboard machine diagnostics & smart alerts:

- Helps in predicting equipment failure and improve reliability leading to lesser downtime
- Real time monitoring of various equipment for continuous monitoring and analytics
- Live data from equipment including ME, AE, Boiler, Incinerator, Slip, GPS, Log, Anemometer apart from additional information from AMS, PMS, Bridge bring in necessary intelligence through various comparatives, historical analysis, deviation from standards, projected performance measures etc.

IRClass Smart Ship Hub (SSH) team also brings in required process & domain insights in operations across: Refit monitoring, Ship defect & repair system, Procurement value chain, Weather impact on vessel performance etc.

The IRClass Digital platform can act as a “Single Source of truth” providing real time data from the vessel: Bridge, Navigation, Machinery, Electrical in addition to Weather, sea state etc. With time stamped data from the source coming in most original form, sanctity & relevance of insights derived from this data leads to higher accuracy in addition to other value adds such as:

- Remote vessel performance management
- Performance Advisory & Compliance
- Energy Efficiency

With over 45 years of serving the maritime industry it's very important for IRS to take a longer view. With profound shifts in attitudes the maritime industry has seen acceleration in the digital journey and at IRClass, we take our role of being a responsible steward of maritime best practices with pride. IRClass Digital initiative stands testament to our commitment. We look forward to showcasing you our digital platform in detail.



Virtual Events/Webinars

Maritime India Summit 2021 2nd-4th Mar 2021



Hon'ble Prime Minister of India inaugurated the Maritime India Summit on 2nd March 2021. Our Executive Chairman, Mr. Arun Sharma spoke at the - Plenary Session 2: Shipbuilding, Ship Recycling, Ship Repair. Mr. Sharma also shared his perspective on "Partnering with India" in the CEOs' Forum under the stewardship of Shri Mansukh Mandaviya IRClass had a virtual stand at the exhibition.

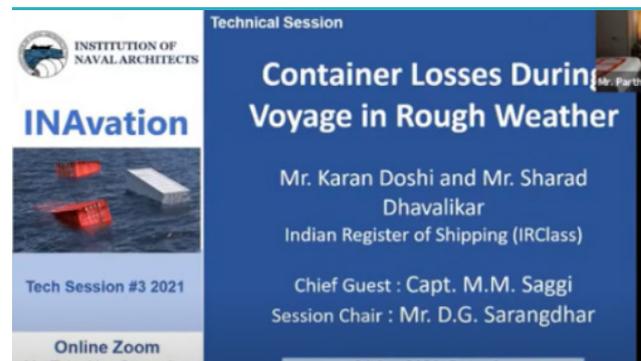
International Shipping Conference (ISCO) 2020 – 26th-28th Nov, 2020



IRClass had a prominent presence at International Shipping Conference (ISCO) 2020. IRClass Executive Chairman, Mr. Arun Sharma was on the Advisory Board of ISCO 2020. Mr. Sharma inaugurated the Plenary Session & Technical Seminar held on 27th Nov, 2020. IRClass was a platinum sponsor for the event. Mr. Amit Bhatnagar - Sr. Principal Surveyor & VP – IRClass and Chairman of IME (I) Kolkata branch was the Convenor for the event.

IRClass presented Technical Papers on 'Remote Surveys – The Past, the Present and the Future' by Mr. Karan Doshi, Mr. Apurba Ranjan Kar, Mr. Narendran Girish, Research & Innovation Center and 'Implementation of Cyber Risk Management in Shipyards' by Mr. R. Srinivas, Plan Approval Centre.

Container Losses During Voyage in Rough Weather



Mr. Sharad Dhavalikar & Mr. Karan Doshi, Research & Development Division, IRClass were speakers at the "Technical Session: Container Losses During Voyage in Rough Weather" organised by The Institution of Naval Architects, India held on 24th April 2021.

Covid-19 Impact on Maritime - Industry Expectations – 19th May 2020



Indian Register of Shipping (IRClass) and Informa Markets in India jointly organized a webinar on "Covid-19 Impact on Maritime - Industry Expectations". IRClass was a 'Knowledge Partner' in this joint initiative. Our Joint Managing Director, Mr. Vijay Arora was one of the speakers on the panel.

Cyber Resilience – Managing Maritime Cyber Risk – 16th Jul 2020



IRClass and Informa Markets jointly conducted a webinar on the topic “Cyber Resilience – Managing Maritime Cyber Risk”. R Srinivas, VP & Sr. Principal Surveyor, IRClass shared his insights on challenges associated with maritime cyber risk and how organisations can work towards becoming Cyber Resilient. The webinar was well received from participants across 12 countries including US, UK, Singapore, UAE, Denmark, Netherlands amongst others.

Evolution and Usage of Electromagnetic Simulation in the Naval and Shipbuilding Industry – 10th Jul 2020

IRClass and Altair co-hosted a webinar on “Evolution and Usage of Electromagnetic Simulation in the Naval and Shipbuilding Industry”. The half day webinar drew participants from various sectors including the Indian Navy, shipyards, designers, consultants and academia. Mr. Sharad Dhavalikar, Principal Surveyor, IRClass was the lead Speaker in this joint webinar. Ramkumar Joga & Deepti Poojari, IRClass were also in the panel of speakers.

International Naval Engineering Conference and Exhibition (INEC 2020) 5th-9th Oct, 2020



Technical papers were presented from Research & Innovation team of IRClass by Mr. N Girish, Mr. Sharad Dhavalikar, Mr. Ramkumar Joga & Mr. Akula Chaturvedi. IRClass R & D Team also participated in the live panel discussion for the session – Simulations, Modelling & Analysis held on 7th Oct, 2020 conducted during International Naval Engineering Conference and Exhibition (INEC 2020).

Use of Data for Improvement of Vessel Performance - 2nd Dec 2020



IRClass, Kongsberg Digital & MAN Energy Solutions organized a joint webinar on “Use of Data for Improvement of Vessel Performance” held on 2nd December 2020. Mr. Apurba Ranjan Kar, IRClass, was one of the speakers for the joint webinar.

For more details about our events, visit: <https://www.irclass.org/media-and-publications/events/>

Key Press Releases



Mr. Arun Sharma of Indian Register of Shipping (IRClass) receives India's Highest Maritime Recognition – Varuna Award

Indian Register of Shipping (IRClass) is delighted to announce that its Executive Chairman, Mr. Arun Sharma, has received India's most prestigious maritime award, Varuna award, at the 58th edition of National Maritime Day.



Mr. Vijay Arora takes over as Managing Director at Indian Register of Shipping (IRClass)

Indian Register of Shipping (IRClass) announces a top management transition with Mr. Vijay Arora taking over as Managing Director with effect from 1st July 2021.



Indian Register of Shipping (IRClass) takes major initiatives on the path to Digitalisation

IRClass announced major initiatives towards digitalisation and offering its services through a unified digital platform. IRClass ties up with Smart Ship Hub to build a digital platform. The 'IRClass Digital' initiative aims to build a world class digital framework based on 4 key pillars – technology, people, processes and open innovation.

Indian Register of Shipping (IRClass) offers EEXI and CII services

IRClass will be offering two new services Energy Efficiency Existing Ships Index (EEXI) and Carbon Intensity Indicator (CII). Through these new services, IRClass will assist shipowners and managers in assessing the EEXI and CII of their vessels and determine compliance.

Indian Register of Shipping (IRClass) launches new service for container certification

IRClass launches a new service to provide certification of marine containers in accordance with IMO International Convention for Safe Containers (CSC). It has released Guidelines on Certification of Containers.

Indian Register of Shipping (IRClass) undertakes successful sea trials for pioneer batch of vessels in India to use biofuel

IRClass has undertaken successful sea trials for two vessels - Ambuja Mukund and Ambuja Vaibhav towards use of biofuels in concurrence with the Indian flag administration. It's a significant step forward to reduce India's carbon footprint by 2030.

Indian Register of Shipping (IRClass) delivers Emergency Response Plan and Oil Spill Response related services to Qatari ports

IRClass has delivered a set of detailed Emergency Response Plans (ERP) and Oil Spill Contingency Plans (OSCP) for Hamad and Al Ruwais ports. The two ports fall under the authority of Mwan Qatar.

For detailed news, visit: <https://www.irclass.org/media-and-publications/news/>

Vessels – Deliveries & Conversions

Indian Register of Shipping (IRClass) successfully completes vessel conversion project in Turkey



IRClass completed the classification of a 9589GT, seven deck vehicle carrier to a livestock carrier named Freesia. This is the second conversion of its type following the successful conversion of its first Lebanese-flagged vessel, Jouri, in April 2020.

Indian Register of Shipping (IRClass) provides classification services for JSW Group



IRClass successfully classed eight 8000DWT 122 m general cargo vessels for JSW Shipping & Logistics Pvt. Ltd., a JSW Group Company. The vessels were built at Wuhu Shipyard, China.

Dolphin No. 32 built under classification of IRClass



Dolphin No.32, seventh of the total 13 tugs, is a 70t BP tug equipped with diesel propulsion engines totalling 4,412 PS and Z-drive propellers and is capable of external fire-fighting complying with IRS class notation Agni 1. The tug is built at Kanagawa Dockyard.

Cochin Shipyard Ltd Yard No. 25 & Yard No. 26 built under classification of Indian Register of Shipping (IRClass)



1st vessel, JSW Mihirgad & 2nd vessel, JSW Malhargad, of the series of 4 vessels are RSV Type-4 general cargo ships, 122 m long, 8000 DWT and are intended for carriage of cargoes like Coal, Iron ore, dolomite, lime stone in bulk, steel coils, steel slabs etc being built for the owners – JSW (JSW Shipping & Logistics Pvt Ltd) under single Class of IRS.



Mr. Ranjeet Singh shares his insights on how his department coped with the challenges of the coronavirus pandemic.

- Regional Manager (West Coast of India & Sri Lanka), Divisional Head QHSE T&IS and Management Representative

The world has been through unprecedented times due to the COVID pandemic over the last two years.

However, despite these testing times, our Surveyors have been working on the frontline ensuring that surveys are carried out safely and effectively as ships are required to be in continuous compliance with all statutory requirements.

When COVID-19 first hit, we knew that as a Class Society we would have to undertake surveys but with considerable precautions similar to healthcare professionals and other frontline workers.

Our staff have been made aware of the risks of COVID -19 infection and the measures to be adopted to mitigate the same.

Further at the management level, we constantly undertook risk assessment based on prevailing conditions including geographical location and extent of inoculation. Survey stations have been advised to assess the risks prior to onboard visits and surveys.

During these stressful times, a constant communication both at individual level and general level was maintained to ensure that the Surveyors and staff are motivated. As the pandemic was evolving, IRClass ensured that the reliable information is available swiftly and efficiently to all Surveyors and family members.

Thankfully, IRClass staff have managed to avoid serious illness.

Initially, due to lack of credible information, our team members were apprehensive. However, as things started to become clear and with safety protocols in place, e.g, extensive testing, confidence in our Surveyors has increased who then have

started to volunteer to undertake surveys. Thus IRClass was able to safely and effectively deliver our services.

We put in place a strategy with strict and clearly defined protocols for Surveyors going onboard ships. This included collection of as much information as possible regarding the vessel's recent port calls, the last crew change and health background of personnel onboard. This was to assess the potential risk involved as we looked to ensure that neither our Surveyors nor clients our affected. Further, in order to keep the exposure to a minimum, documentation was obtained from the vessels and its review was undertaken to the extent possible prior boarding the vessel.

Initially, it was a challenge to undertake survey together with protective equipment - sanitary masks, gloves etc. This further is complicated by the different protocols of ports, travel and testing requirements. However, as the time passed we got accustomed to the same.

As we enter the inoculated world, we have advised our Surveyors not to become complacent and maintain discipline. This is the only way to beat the virus and stay safe.



Recently Concluded Courses

ISM/ISPS/MLC internal auditor course for marine professionals, 9th-11th August 2021

3 day internal auditor online course was conducted for participants from Colombo, Sri Lanka. Course was well-received & attended by 15 marine professionals of varied background including sailing Master Mariners, Chief Engineers, Tech Superintendents and Independent Surveyors.

Training program on Class standards, 1st-3rd September 2021

IRClass Academy conducted a bespoke training session on IRClass standards for new construction and ship repair activities to the middle management officers of one of the Country's major public sector shipbuilder - Hindustan Shipyard Limited, Vishakhapatnam. This 3 days class room training was the first class room course conducted post pandemic lock down, which was held at the shipyard premises for 25 officers, adhering to social distancing and other pandemic protocols.

The course was highly interactive and much appreciated by the participants and the HSL Chairman and Managing Director.

Upcoming Courses:

Training of Technical staff of Indian Coast Guard, Jan & Feb 2022

Fifth & Sixth batch of the two week long training program for technical personnel of Indian Coast Guard is scheduled to be conducted in classroom setting at H.O, premises from 3rd to 14th January 2022 & 6th to 18th Feb 2022 respectively. Topics to be covered include construction, operation and refits of coast guard vessels. Faculty will comprise of subject matter experts having marine background with extensive experience in related field.

After successful conclusion of first & Second batch in 2019, third & fourth batch training programs were conducted in September 2021 & October 2021 respectively. Third & fourth batches were first physical classroom training sessions conducted at our Head Office premises after the outbreak of the pandemic, adhering all protocols. The course is updated progressively to include suggestions and feedback from the previous batches and was much appreciated by the participants.

For further details and to register for the upcoming courses, please visit:

<https://www.irclass.org/academy>, Email: academy@irclass.org

Vaccination Drive



IRClass organised in-house vaccination drive for its employees, their families as well as support staff members at our Head Office, Powai.

The process was smoothly conducted in collaboration with HCG ICS Khubchandani Cancer Centre with minimum waiting times and in utmost sanitized and safe conditions.

First & second vaccination doses have been administered on 4th June 2021 & 27th Aug 2021 respectively. Over 400 people have been vaccinated successfully.





Promotions



Mr. Tapan Kumar Sahu has been elevated to the Head Technical position. He shall discharge the role and responsibilities of the Head Technical position in addition to his current role of DH-STs.

Mr. Ranjeet Singh has taken over as Management Representative. He shall discharge the role and responsibilities of the Management Representative and DH - QHSE in addition to his current role of Regional Manager West Coast of India and Sri Lanka.



Mr. G Natarajan has been elevated to the Regional Manager position and shall be based at Chennai.

Mr. Mahendra Singh Rawat has been elevated as the Regional Manager South-East Asia and shall be based at Singapore. He shall lead and manage overall business prospects of IRS in the South-East Asia Region which includes Singapore, Malaysia, Indonesia, Thailand, Philippines, and Vietnam.



Mr. Bai Guoping has been promoted as the Regional Manager Far-East Region and shall be based at Qingdao. He shall lead and manage overall business prospects of IRS in the Far East Region which includes China, South Korea, Hong Kong, Taiwan and Japan.



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