IRCLASS
Indian Register of Shipping

Issue 2 - April 2022

TOUCH
OF
CLASS

CONTENTS

Message from the Executive Chairman's Desk

Dear All,

Congratulations to all IRSians on our Foundation Day (04th April) !!

I am happy to note that IRS has grown both geographically, adding Survey Stations, and in terms of fleet strength, despite the challenging business environment.

With the easing of restrictions in the past few months, there have been several positive developments across the organisation. This includes the inauguration of our CEMS facility at Visakhapatnam by Shri Sarbananda Sonowal, Hon'ble Minister for Ports, Shipping and Waterways, Government of India. This will undoubtedly provide the necessary impetus for growth of CEMS.

We have been closely working with the Ministry of Ports, Shipping and Waterways in their efforts to develop the Inland Waterways in the country. IRS played an integral role in the drafting of the Inland Vessels Act 2021 which was passed by the Indian parliament. IRS is now looking to build on this crucial legislation to promote reliable and safe transportation for goods and people throughout India's inland waterways. We are committed to various State Governments for making trade seamless, safer and environment friendly by utilising our rich array of inland waterways.

We are continuously working on the initiatives of the Ministry, including seamless cargo transportation from ports in hinterland and sea (River-Sea Vessels); and coastal transportation. Thus, leading to a modal shift from road to waterways and a potential reduction in environmental pollution.

Further, IRS is closely working with the stakeholders (including undertaking Joint Industry Projects) on decarbonisation both in new constructions and retrofits.

With increased digitalisation, cyber risk management is becoming an essential part of daily life. Shipping with its connectivity is no exception. IRS is working on developing methodologies, conducting training programmes and working with the stakeholders on cyber risk management.

In continuing with our philosophy of organisational expansion through organic as well as inorganic growth means, we acquired a test laboratory based in Jaipur, India to further strengthen our presence in test laboratories. Considering the geopolitical conditions currently prevailing, the global economy and thereby shipping are affected and I am sure with the efforts of all, this too shall pass.

I wish the readers a happy reading.

Managing Director's Message

Dear Reader,

Congratulations to all IRSians on our Foundation Day (04th April) !!

We at IRS, have been working tirelessly to ensure that the services to our stakeholders are unhindered and no ship or service is affected due to pandemic and its aftermath, which showcases the commitment of our Surveyors and colleagues.

During the pandemic, we did not lose focus on the development front and continued working on developing new rules/guidelines thereby gearing up for the forth coming requirements including renewable energy and alternate fuels. We are undertaking joint industry projects in the various fields including green energy. We are glad to note that first of the 23 hybrid ferries for Kochi Metro Railway Ltd., a major initiative in urban transportation, is delivered by Cochin Shipyard Ltd. The ferries are propelled by LTO (Lithium-Titanate Oxide) batteries, which are charged from shore and alternatively can also run on diesel engines.

This period presented challenges and our training programs had to be moved to virtual classroom. Quality is the key to success of any classification society. Towards this, we continued to undertake frequent mentoring and training programs, based on the feedback received from various sources including the field reports and our stakeholders.

Our aim remains to provide continued quality services to all our stakeholders towards achieving their compliance goals.

Touch of Class from now on will include regular features updating the progress of technical developments at IRS.

I wish the readers a happy reading.

From the Editorial Board

Dear Reader,

As we celebrate the Foundation Day of IRS, we appreciate the efforts of all IRSians and the industry stakeholders for their continued support throughout this exciting journey.

With this background, we are glad to publish the first edition of Touch of Class this year. This edition continues to stress on the issues affecting the industry including cybersecurity and decarbonisation. This not only brings awareness of the issues but also highlights IRS' efforts in developing tools/methodologies in assisting the industry.

These are evolving subjects and require sustained development activity. From this edition of Touch of Class, we aim to engage all the stakeholders progressively through series of articles focussing on developments both at IRS and Industry at large.

As the global economy gathers pace, we expect increased interaction among interested parties and we look forward to exciting times ahead.

We are sure that you will find this edition useful and would like to receive your feedback/inputs on toc@irclass.org.

- Editorial team

Happy Reading

Numerical Studies Towards EEXI Calculations

**Mr. Ramkumar Joga, Surveyor**

Introduction:

Energy Efficiency Existing Ship Index (EEXI) calculations are to be performed for ships using the guidelines in MEPC Resolution 333(76). EEXI calculations requires the calculation of reference speed (V_{ref}) either by using the sea trial data, model tests or by using numerical methods. For existing vessels, the sea trial and or model test data may not be available for EEXI draft to calculate V_{ref}. In such cases MEPC guidelines provides an empirical formulation for predicting V_{ref}. However, empirical formulation based V_{ref} is in general conservative resulting in higher EEXI.

With the recent development in the computational technology and the advancements in the numerical methods based on Computational Fluid Dynamics (CFD), prediction of speed power curves of the vessel, investigating the effect of Energy Saving Devices (ESD) and relevant studies can be performed reliably utilizing CFD.
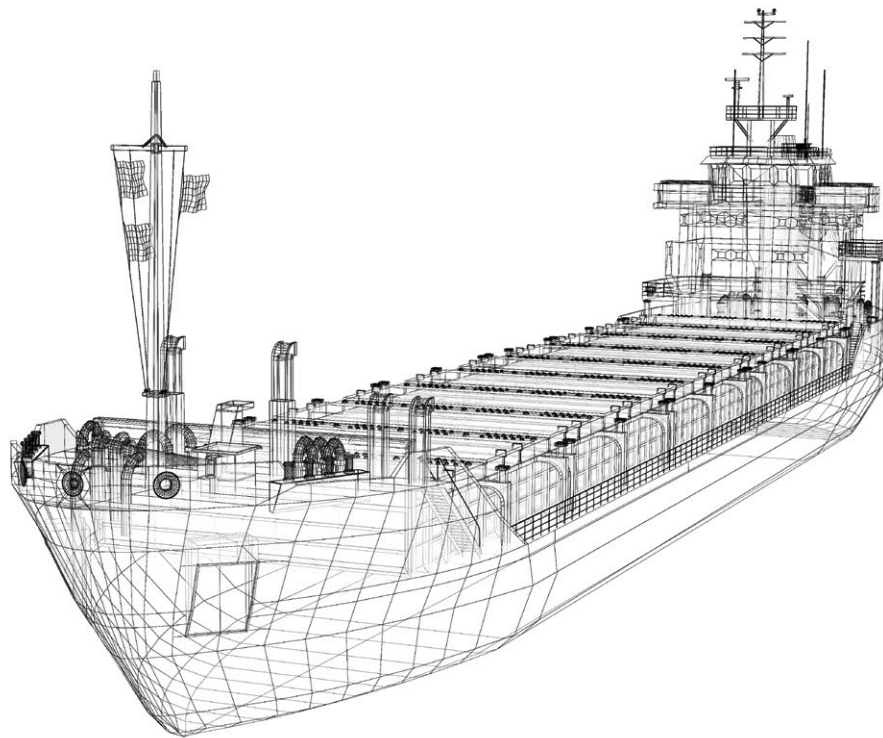

Computational Fluid Dynamics (CFD):

CFD is a method of numerical modelling of the real-world physics depicting the actual sea-trials and or model tests. The advantage of this method for EEXI calculations is that it is a quick and cost-effective way of arriving at V_{ref} by computing the speed-power curves for various drafts. The International Towing Tank Committee (ITTC) has developed guidelines for performing CFD simulations for resistance prediction (ITTC-7.5-03-02-04) and self-propulsion (ITTC-7.5-03-03-01) which are used for predicting V_{ref} numerically
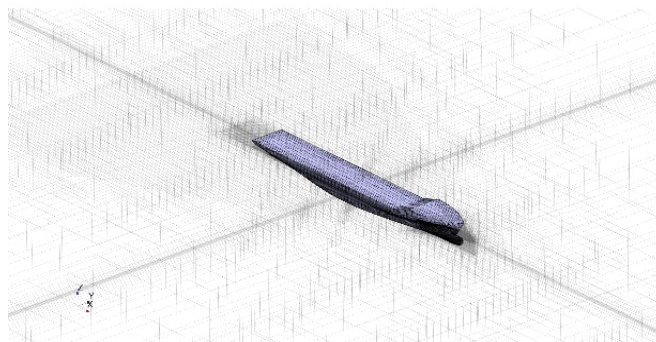
3D mesh (discretization of computational domain)
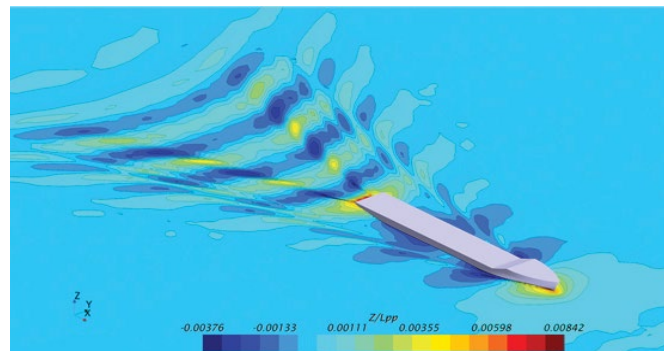
Free surface contours

Wave-cut along the hull

Wave height contours with bulbous bow

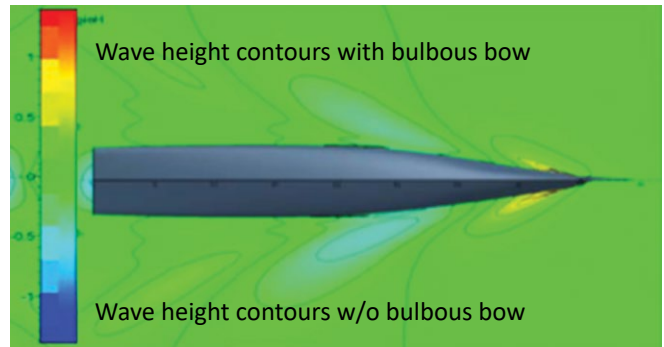Wave height contours w/o bulbous bow
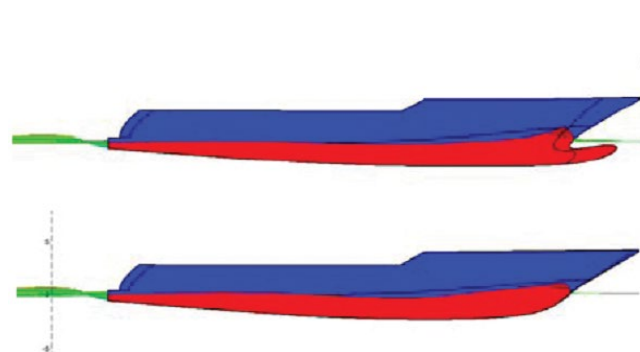
Fig. 1 Resistance prediction and investigating effect of bow shape on wave making resistance

The CFD approach involves discretising the spatial domain (ship surrounded by water) into finite control volumes using 3D mesh (Ref Fig. 1). The governing equations of mass and momentum are solved for the computational domain such that the relevant quantities (mass, momentum, energy etc.) are conserved for each control volume. Reynolds Averaged Navier Stokes (RANS) Equation are solved to simulate the flow physics surrounding the ship hull. The basic fluid flow is simulated using two phase (air and water) viscous flow.

Resistance Estimation using CFD:

The resistance estimation is the first step towards EEXI calculation. The free surface contours and wave generated due to ship moving in water (wave-cut) is studied with numerical assessment (Fig. 1). Such assessment gives insight into the effect of bow on the generated waves e.g. as shown in Fig. 1. Overall resistance due to hull is computed and the results are validated with available experimental results (Fig. 2)
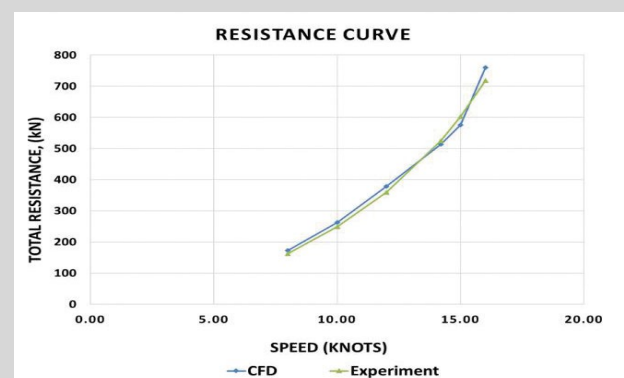
Fig. 2 Hull resistance predicted using CFD

Speed Power Curves based on Propeller Characteristics:

Propeller characteristics are predicted with open water simulations (stand-alone propeller) and/or self-propulsion simulations (hull propeller interaction). Open water simulations require the exact propeller geometry to arrive at thrust and torque (Kt, Kq curves). Self-propulsion simulations can be performed with different approaches as shown in Fig. 3 to predict the speed power curves.

Energy Saving Devices (ESD):

The energy efficiency can be improved by utilizing various Energy Saving Devices (ESD) such as propeller duct, propeller boss cap fins, wake equalizing ducts, etc. ESDs are evaluated with model testing before implementing on the vessel. However, scaling effects of ESDs remain subject of investigation when full scale vessel is to be evaluated for improved efficiency. The numerical techniques come handy in such cases. Effect of these devices can be investigated effectively with numerical techniques. The primary intention is to resolve the flow in the vicinity of the ESD and reassess the speed power curves of the vessel. Fig. 4 shows various ESDs and the flow in the vicinity of the ESD predicted utilizing CFD. Also shown in Fig. 4 is the predicted speed power curves with and without ESDs for sample vessel.

Summary

Reference speed as required for EEXI calculations can be estimated utilising CFD simulations. In general, the V_{ref} arrived based on CFD is expected to be higher (resulting in lower EEXI) than empirical formulation based on DWT of the vessel (IMO/MEPC – Ref Fig 4). Investigations such as bow optimization for reducing the resistance can easily be carried out with CFD techniques. Further, the numerical simulation can be effectively utilized for studying ESDs and predicting the improvement in energy efficiency (e.g. Ref Fig. 4). Other energy efficiency techniques e.g. air lubrication can also be investigated with numerical aids, however, it requires further studies in terms of validation with realistic data and implementation of advanced numerical techniques.

Propeller model

Open water characteristics

Moving Reference Frame approach
(Exact propeller geometry with approximated flow)

Virtual Disc (approximated propeller geometry)

Predicted speed power curve

Rigid Body Motion approach (Exact propeller geometry with actual flow)
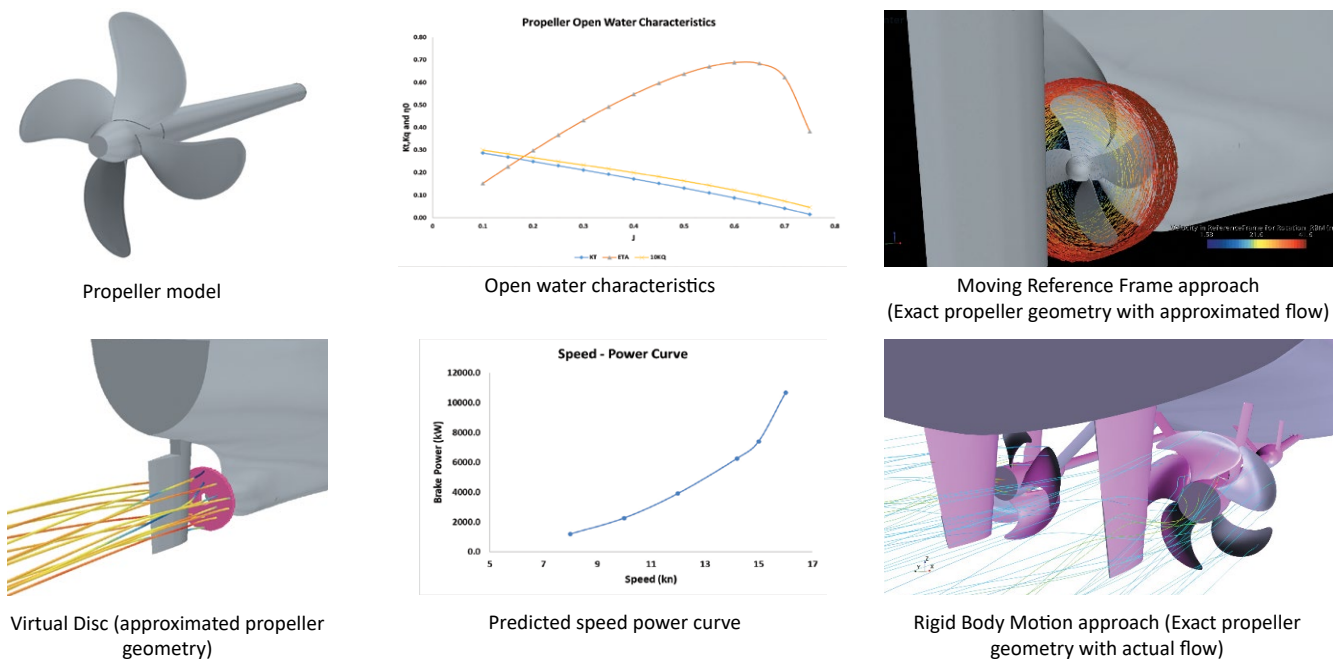
Fig. 3 Propeller simulations for deriving speed power curve

Wake equalizing duct

Propeller duct

PBCF & Low-Pressure Region (blue) on Hub

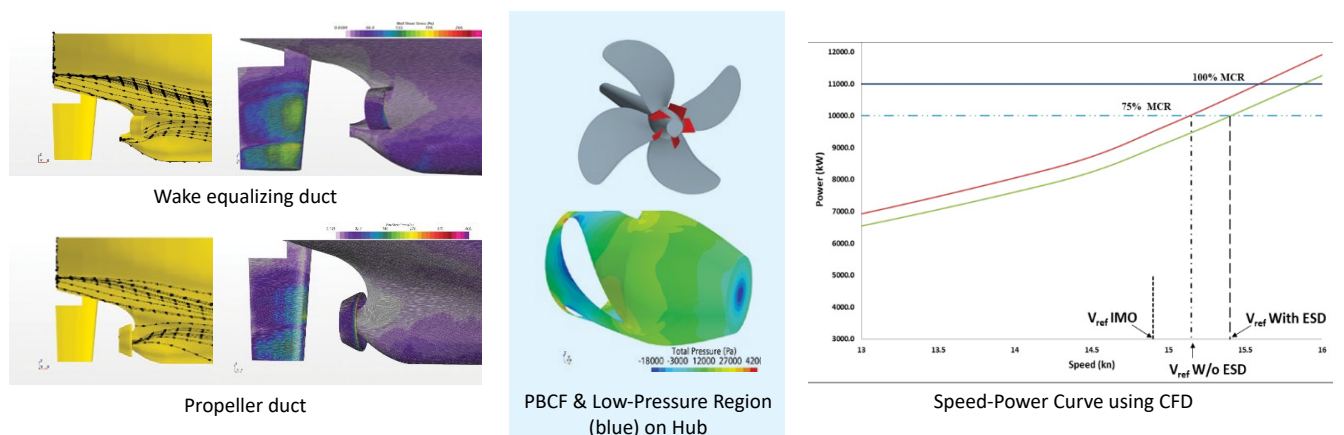Speed-Power Curve using CFD

Fig. 4 Numerical computations with ESDs and Predicting V_{ref}

Cyber Risk Management – The 'Defence in Depth' Approach

Mr. R Srinivas -
VP & Sr. Principal Surveyor

Prologue

Digitalisation, remote connectivity and cyber vulnerabilities are on the rise, leading to more and more systems being affected by cyber-attacks. The critical question now is, how to protect a cyber asset, not "does it need protection?". Cyber security is not an option anymore, but a reality which needs to be addressed and appropriately mitigated.

Vessel and facility operators should view cyber risks along with the physical, human factor, and other types of risks. It is essential to protect critical systems and data with multiple layers of protection measures which should include role of personnel, procedures and technology.

Defence in Depth is an implementation of detection and protection measures designed to prevent or slow down the progress of a hacker, which would enable an organisation to detect and respond to the cyber-attack. It is imperative to note that it is not a linear exercise and requires a holistic approach to protect critical assets, considering all interconnections, dependencies and upgradations. This series of articles in Touch of Class, discusses strategies for specific cyber threats and direction on how to create a Defence-in-Depth security program for ship control system. The articles starting from anatomy of attack, detail out existing system controls to mitigate cyber-attacks, overview of defence in depth approach, type of attacks and the implementation methodology

The Anatomy of a Cyber Attack

The journey of ensuring that a critical system is resilient to cyber-attack, begins with understanding the anatomy of cyber-attack or in simple words understanding psyche of the hacker. Various studies have identified a 3-stage process which a hacker follows while attacking a cyber system.

Reconnaissance or Observation Stage

This stage basically is a process of acquiring information about a particular target and gathering intelligence. Public sources are one of the key modes of information gathering. The information available would be generic like ship design, equipment details, how authorised users interact with the equipment, to more intricate details of fire wall, IP addresses etc. Even source code attached to company websites, masked under HTML comment tags, can assist the hacker. Apart from the above sources, human information supplied through various social media platforms like Facebook &, Twitter, company publications and conference proceedings can be sources of information for

ANATOMY OF CYBER ATTACK

- Observation **A**
- Identification **B**
- Execution **C**

a hacker. The hacker eventually armed with this information gathered from the public domain and other sources, uses simple software tools to test the Network. The tools scan the traffic moving in and out of the target company/ship and can provide insight to more critical information. The hacker or threat agent discovers insight into the target system by probing the network perimeter to characterise the system, which typically involves identifying firewall, if installed, types of web or other Internet facing servers and any open communication ports.

The sole objective in this stage would be to find out possible ways of intruding the target system. The potential intrusion vectors can be simple as physical intrusion and simple tools to sophisticated tools. At this stage, the goal is to exploit any and all vulnerable people, processes, or components to gain entry. Adversaries may have a direct target in mind or merely wish to deposit code on any available machine in order to maintain a presence on the network or system and to allow for future unauthorised access and generally covering their tracks. Once the access point is identified, hackers can accomplish their intent through network in¬trusion.

Identification Stage

The hacker carries out more active probing through online /offline interaction (may try to gain insight by Impersonating as user, manufacturer etc) with the targeted ship/organisation. The main aim of the hacker would be to gain more specific information of the target and where possible test the waters, using simple probing tools to scan the target network to discover IP addresses and open

ports. Social engineering will be extensively used for gathering information. Use mass or targeted mails the hacker may use phishing, spear phishing to get further insight into organisation networks. At the end of this stage the hacker would be armed with information of target weak areas, typically termed as cyber-attack surfaces.

Execution Stage

In this stage the hacker uses various resources including brute force where necessary, to infiltrate the weak link in the network, which was identified in previous stages. Malafide intentions could be to copy large volume of sensitive data, erase /corrupt a data base or hold data for ransom. There have been instances where the threat actor just plants a Malware or Trojan, which later carries out covert operation. Typical example being (as reported by M/s McAfee) Stuxnet, was a multi-part worm, which travelled on USB sticks and spread through Microsoft Windows computers. The virus searched the infected PC for signs Siemens Step 7 software, which industrial computers serving PLCs use for automating and monitoring electro- mechanical equipment. After finding a PLC computer, the Malware attack updated its code over the internet and began sending damage inducing instructions to the electro-mechanical equipment the PC controlled. At the same time, the virus sent false feedback to main controller. Anyone monitoring the equipment would have had no indication of a problem until the equipment began to self-destruct. Stuxnet reportedly destroyed numerous centrifuges of a country uranium enrichment facility. During subsequent years this virus was modified by other groups and used to attack water treatment facilities, power plants and gas lines.

Whether it's a data modification, creating a denial of service, or taking over command and control of the process, system, or the entire network, it is possible that the intruder may leave some doors open for next attack.

Technical Software Development

IRClass offers a range of digital solutions aimed at improving the efficiency of operations for surveyors and for our clients in the field. These applications help in surveys and examinations faster by digitalising processes like rule compliance checks, thickness measurement and associated analyses. They also help provide specialised services such as onboard record maintenance and emergency response system.

These services further aim to achieve digitalization in the Marine Industry keeping with the global industrial trend of deriving and utilizing data-driven solutions.

Technical Software Development Group (TSDG), under the Plan Approval (PAC) division develops and maintains the suite of applications. The applications and their purposes are described in short below:

Mr. Swapnil S Khadilkar, Senior Surveyor

IR-CS verifies compliance of vessels with Common Structural Rules set forth by International Association of Class Societies (Applicable to tankers and bulkers more than 90m).

IR-Hull is a scantling calculation software which assists surveyors in verification of the compliance of ship designs to rules and regulations set forth by Indian Register of Shipping.

IR-ClassTM assists surveyors in verification of the compliance of the ship thickness measurements (for Class and CAP surveys) as per IRS survey procedures.

DX-Machina automates the process of Machinery Plan Approval and verifies machinery components with the applicable Rules.

ERS-Strength carries out the strength assessment of vessels in emergency response service by allowing users to model damages into the ship hull structure and carry out analysis for Ultimate Strength, Residual Strength etc.

IR-Scribe is an onboard software package that helps the Vessel's crew to maintain records of their Ballast Water, Oil & Garbage Disposal operations as per MEPC, digitizing the record keeping operations in sea-going vessels.

Naval DSA assists users in carrying out Finite Element Analysis of ship structures as per the IRS Rules and Regulations for the Construction and Classification of Naval Ships.

VPMS-Machinery is a vessel performance monitoring system that collects operational parameters for the machinery in real-time through periodic performance reports and makes necessary comparisons against machinery benchmarks.

IR-HULL

Rule Scantling Calculation Software

Verification of compliance of scantlings with class rules is a fundamental part of ship design process. Scantling compliance checks are iterative processes and digitalisation helps quicken these processes.

Key Features

An Intuitive modeler with smart CAD features allows users to draw multiple ship sections, assign dimensions and material properties to the structural elements and assign compartment information the section geometry. The application has in-built libraries of standard materials and stiffener profiles for quick use.

A panel approach to scantling enables the application to automatically detect unstiffened parts of plating. Based on its location & compartment information, the application identifies the rules applicable to each panel and their associated longitudinals. The minimum required scantlings as per rules are compared with the proposed design values.

Longitudinal strength assessment evaluates each modelled section and carries out calculations for all modelled entities in those sections. Deductions for bending efficiency and openings on the plating can be set by the user. The provided sectional property values (moment of inertia and section modulus at neutral axis) at any transverse section are compared with the rule minimum requirements. Buckling assessment evaluates the buckling strength of the members contributing to the longitudinal strength and subject to compressive stress. The panels and stiffeners subject to

A comprehensive reporting module generates the summary and detailed reports for all the analyses performed. Summary reports are useful to quickly view the compliance of structural members to Class rules. The reports can be exported to multiple formats such as .xls (Microsoft Excel), .pdf (Adobe Acrobat), .rpt (Crystal Report).

Compressive stresses in various loading conditions are analysed for their critical buckling stresses. The critical buckling stress of every member is compared with the compressive stresses resulting from global loads on the vessel.

Transverse elements module handles the assessment of members which are not oriented in the longitudinal direction such as transverse bulkheads, bottom floors, side main frames, deck transverses etc. Tools are provided to verify scantlings of such members through manual input. Other useful tools like angle property calculator, bottom slamming assessment and end attachment scantlings are also available in the application.

CONTACT US
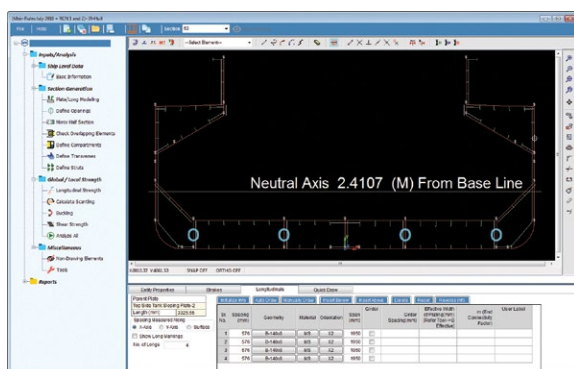For queries, contact us at:
Technical Software Development Group
tsdev@irclass.org
irhull@irclass.org

Ship Building Project Management
sbpm@irclass.org

IR-Hull application displaying a modelled ship section

Key Press Releases

Shri Sarbananda Sonowal inaugurates Centre of Excellence in Maritime and Shipbuilding (CEMS) facility at Visakhapatnam

Union Minister of Ports, Shipping and Waterways Shri Sarbananda Sonowal inaugurated Centre of Excellence in Maritime and Shipbuilding (CEMS) at a function in Visakhapatnam. The inauguration ceremony, held on 23rd February 2022, was well attended by a wide spectrum of industry, academia and administration.

Indian Register of Shipping strengthens focus on safety of Inland Waterways

Indian Register of Shipping is forging ahead with a drive to enhance inland vessel safety throughout India to aid the country's economic growth. IRS played an integral role in the drafting of the Inland Vessels Act 2021 which was passed by the Indian parliament.

IRClass Systems and Solutions Pvt Ltd (ISSPL) announces acquisition of test laboratory

IRClass Systems and Solutions Pvt Ltd (ISSPL), an entity promoted by Indian Register of Shipping, has acquired several verticals of CEG Test House including Food & Agriculture, Pharmaceutical, AYUSH and Environmental Testing

Indian Register of Shipping wins the "National Best Employer Brands 2021 Award"

IRS was awarded the prestigious 'National Best Employer Brands 2021 Award' by the World HRD Congress in a glittering ceremony held at Taj Lands End, Mumbai on 23rd March 2022.

The National Best Employer Brand Awards features top organisations across India who have showcased exemplary human resources practices and have put the employee well-being and employee first philosophy at the core of the business especially during the pandemic period.

Indian Register of Shipping completes CAP certification of VLCCs and LPGs of MOL Tankship Management Pte Ltd

Indian Register of Shipping has successfully completed Condition Assessment Programme (CAP) certification of 4 vessels of MOL Tankship Management Pte. Ltd., Singapore. Having certified more than 200 vessels including Oil Tankers, Chemical Tankers, Product Carriers, Asphalt Carriers and Liquefied Gas Carriers, IRS has strong experience in performing CAP certification

Indian Register of Shipping opens office in Coimbatore

Indian Register of Shipping, has opened a new office in Coimbatore, Tamil Nadu. The premises has been operational since February 1, 2022

Indian Register of Shipping publishes guidelines for autonomous surface vessels and remotely operated vessels

IRS has published guidelines on remotely operated vessels and autonomous surface vessels. The focus of the high-level Guidelines is on providing a broad framework/ philosophy for stakeholders involved in design, construction and testing of such vessels with varying levels of autonomy

Indian Register of Shipping prepares Disaster Management Plan for ports of Gujarat Maritime Board

IRS has prepared Disaster Management Plans (DMP) for ports operated by the Gujarat Maritime Board (GMB). IRS has also signed a MoU with GMB towards collaboration for updation and preparation of DMP for all ports under GMB

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

Vessels – Classed

Indian Register of Shipping classes first 100 pax hybrid catamaran (battery powered) ferry

IRS recently classed a 24.8m hybrid catamaran (battery powered) ferry - 'Water Metro-01'. It is the first in a series of 23 such vessels being built by Cochin Shipyard Ltd. The project is a step forward in India's self-reliant initiative of AtmaNirbhar Bharat and represents the collective efforts of CSL, KMRL and IRS.

Floating Border Outposts built for Border Security Force being classed by the Indian Register of Shipping

Indian Register of Shipping is classing a series of nine Floating Border Outposts (FBOPs), constructed by Cochin Shipyard Limited for the Border Security Force, Ministry of Home Affairs. IRS has played a dual role in this project; as Classification Society for classing the vessel and also to ensure that the specific requirements of BSF are met

Indian Register of Shipping classed tug 'Balbir' delivered to Indian Navy

IRS classed vessel 'Balbir' was delivered by Hindustan Shipyard Limited to the Indian Navy. This 50-tonne bollard pull tug was the 200th vessel delivered by HSL to Indian Navy.

Indian Register of Shipping has successfully completed classification of four 8000 T General Cargo Vessels

Mr. H. V. Ramesh, V. P & Head, SBPM, IRS congratulated Cochin Shipyard Ltd on the delivery of the fourth vessel – JSW MANIKGAD while speaking at this momentous occasion.

Events/Webinars

Samudra Manthan Awards 2021

Our Executive Chairman - Mr. Arun Sharma received 'Lifetime Achievement Award' at the 8th International Samudra Manthan Awards 2021 organised by Bhandarkar Publications

Decarbonising Shipping : Issues and Challenges

Mr. Vijay Arora - MD, IRS shared his perspective on 'Decarbonising Shipping: Issues and Challenges' as a key panelist in a webinar organised by Future Fuels (Maritime Gateway publications) held on 25th February 2022

Webinar on Outcome of MEPC 77

Mr. P.K. Mishra, Head of Operations, IRS shared his insights in the webinar on "Outcome of MEPC-77" organised by Institute of Marine Engineers (India) in association with Directorate General of Shipping held on Tuesday 22nd Dec 2021

Ship Design and Shipbuilding in India: Prospects and Challenges – 10-11 Dec 2021

Mr. Sharad Dhavalikar, Principal Surveyor, IRS gave a talk on "Signature Management Studies for Naval Vessels" in the session "Development of Indigenous Shipbuilding for the Defence Sector - The Path to Self-reliance" organised by KAMRI (Kanhoji Angre Maritime Research Institute)

India Maritime Conference – 20-21 Jan 2022

Indian Register of Shipping was an Industry Partner for the "India Maritime Conference" organised by INMEX SMM India Digital. Mr. H V Ramesh, VP & Head – SBPM, IRS moderated the session: Indian Maritime Design. Ms. Sonali Banerjee, Senior Surveyor, IRS participated in the Student-Expert Interactive session on the topic - Energy Efficiency and Alternate Fuels

Indian Register of Shipping R&D team presented papers at the following conferences:

- International Conference on Advances in Naval and Ocean Engineering,organized by Cochin University during 19-20 Nov-21

- International Conference on Naval Architecture and Ocean & Marine Engineering (NAOME 2021) organized by IASED, Hongkong, during 10-12 Dec 2021

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

Surveyor Speaks

A day in the life of a Class Surveyor

Mr. Seshadri Raja
Regional Manager – East Coast of India & Bangladesh

Let us look at the typical job of a Surveyor and how a Surveyor successfully handles this critical responsibility from the perspective of our East Coast of India & Bangladesh Region.

Surveyors are the most visible part of any Classification Society. Being the frontline ambassadors of Class, they interact with key stakeholders like ship-owners, ship managers, ship crew, shipyards, port officials and other authorities.

How does a typical day of a Surveyor begin? Like most mariners, the job of a Surveyor is not the usual/ regular office job, defined by fixed timings. It can begin with travel to a location (sometimes 6 hours one-way) using multiple means of transport and sometimes start at night boarding (2300 hrs) a vessel in port, which is slated to sail out next afternoon and wants to complete an urgent survey.

The first important step is the planning once a survey intimation is received. Planning for a survey is important for effective conduct of any survey and varies with the type of survey, be it class entry, periodical annual-intermediate-special or new construction survey. The ship type and age of vessels are equally important, as they determine specific survey requirements. Survey planning includes study of vessel documents, preparation of checklists and reports, amongst others.

One among the many challenges, is to complete the survey without delay in vessel's schedule. Sometimes, at short notices the Surveyor must plan for port pass, prepare for survey, reach vessel, all within time, to ensure timely completion of requested surveys of the vessel.

Occasionally, survey request at anchorage adds an element of complexity, due to the nature of boarding and surrounding environment.

The actual survey process of involves a thorough examination of the vessel depending on the scope of survey. It requires a Surveyor to judiciously use the limited available time. It also demands reasonably good fitness levels (of the Surveyor) to enter tanks & spaces in the ships structure (as per the age and type of the vessel's scope).

In addition to having the necessary technical knowledge, a Surveyor must possess good communicating skills, to deal with multitude of stakeholders (at shore and on board). Maintaining professional approach during surveys is of paramount importance, to ensure all survey requirements are met, any deficiencies correctly identified and effectively communicated such that, clients understand and rectify & maintain the vessel, thereby saving it from PSC/FSI inspection remarks. It is very important that, Surveyor is pragmatic and shares good practice/s with the ship's crew based on his/her own experience.

There are some downsides like lack of physical comfort due to extended hours of work, extensive travel, odd time attendances on board, unexpected waiting at port pass offices, missing family time/occasions due to short notice for surveys etc., in addition to poor internet connectivity, which must be factored while planning.

In conclusion, while the Surveyor's job is taxing, both mentally and physically, the Surveyor manages to overcome these challenges while maintaining high professional standards at all times.

![IRCLASS ACADEMY — Your Partner in Maritime Professional Development]

Indian Register of Shipping resumed training courses for personnel of the Indian Navy and the Indian Coast Guard, after a hiatus of 18 months on account of the covid-19 pandemic. Two batches of in-person courses for ICG were conducted during 13th to 24th September and 18th to 29th October at the IRClass Head Office at Mumbai, India, while fully complying with strict Covid safety protocols.

IRClass Academy has scheduled 50 training programs during the Q1 of 2022. The training programs cover four industry segments including Ship Operations, Ship Design and Ship Building, Ports and Terminals & Maritime Management Systems.

The online training programs such as ISM Code Internal Auditor, DPA, Navigational Audit, HAZMAT Inventory, Mastering IR Hull, Port State Control, Ship Surveys, Safety Officer, Cyber Security, Disaster Risk Management & Port Facility Officer have been in great demand, in addition to several other courses conducted by IRClass Academy. The response received from overseas candidates is quite encouraging.

IRClass Academy is focusing on delivery of specialized training programs to prepare the industry for the forthcoming regulations and improving the efficiency, such as compliance to MARPOL Annex VI through Alternate Fuel, Welding Procedure Specifications (WPS) for Shipbuilding, Welding processes & control of distortion in Shipbuilding, Dry Docking Good Practices, Maritime Internal Auditor course for ISM/ISPS/MLC and many more.

IRClass Academy has also signed MOU with Singapore based CSIM Pte. Ltd. consultant and value added training provider to enhance the geographical presence. For detailed news, visit: https://www.irclass.org/media-and-publications/news/

Upcoming

📘 Kenya Maritime Authority Surveyors Training

This is a training for Naval Architect Flag Surveyors from Kenya Maritime Authority on Plan Approval as well as field surveys. A physical training programme where the KMA Surveyors will be posted partly at H.O and remaining at survey stations. The duration of training is 48 months spanning over 8 years with 8 months of training per annum. The KMA Surveyors will be trained to undertake Plan Approval and different surveys independently during this training period. The training is scheduled to commence from April 2022 and will continue till March 2031.

For further details and to register for the upcoming courses, please visit: www.irclass.org/academy

Indian Register of Shipping conducts internal training courses at regular intervals. These trainings are meant for existing Surveyors and new employees of the organisation to upgrade the technical knowledge and interact with subject matter experts from different departments in Head Office

Induction Training

Physical classroom induction training was conducted from 29th Nov to 9th Dec 2021 after a gap of about 3 years. This training is intended for Field Surveyors as well as Head Office Surveyors who have completed minimum 6 months and have gained some basic on the job experience. The 10 days training session conducted at IRS HO covered the theoretical topics of Class and Statutory requirements along with the different surveys undertaken by IRS to maintain ships under class. The sessions were highly interactive with workshops and case studies ensuring participation of all participants. It provided a good opportunity for the new members of the organization to get familiar with the departments in H.O and to interact with them.

Refresher Training

Refresher training intended for Field Surveyors with nearly 5 years of experience was held in the physical classroom mode at IRS, Head Office from 3rd to 8th Jan 2022 and will be held at least once every year. The Objective was to ensure that the Surveyors upgrade the knowledge about new rules/ regulations, change in policies, issues with survey, reporting etc. The training provided a good platform for them to interact with the subject matter experts and top management at H.O.

Employee Corner

Mr. Sethu Madhavan has joined CEMS (Centre of Excellence in Maritime & Shipbuilding) as Chief Executive Officer, at our Visakhapatnam office.

Dr. Asokendu Samanta has been elevated as Divisional Head for Research and Development Division.

Mr. Amit Bhatnagar has been assigned dual responsibility of leading IRClass Academy based at Head Office along with the Regional Manager role of West Coast of India and Sri Lanka.

Mr. Seshadri Raja has taken over the role and responsibility of Regional Manager – East Coast of India and Bangladesh.

Mr. Arvind Kumar has taken over the role and responsibility of Head of Survey Station - Dubai.

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