



FLUIDFLOW
PRESSURE DROP SOFTWARE



Company Overview: Cochin Shipyard Ltd India is one of the top integrated marine building, repair and training services companies and India's most respected commercial & defence ship and offshore structure building facility. www.cochinshipyard.com.

Project Overview: The IRClass (Indian Register of Shipping), a leading Classification society and member of IACS, has just completed the new construction survey of the MV Indira Point which was completed two months ahead of schedule at a cost of approximately USD 25 million. This vessel is a high value, technologically sophisticated Buoy Tender multi-purpose vessel built by Cochin Shipyard Ltd (India) under single class. The new vessel MV Indira Point, 72 mts long, 1350 tons DWT, fitted with Heli-deck and a 35 tons capacity crane for handling buoys in deep seas was handed over to the Directorate General of Light Houses and Light Ships (DGLL India) in April 2015. IRClass Chairman and Managing Director (CMD) Mr Arun Sharma said "This single class project and its successful completion represents a major step forward for IRClass".

Challenges: To evaluate the operating performance of an existing pumped sea water fire fighting system serving a heli-deck, determine the plant limitations based on a revised system layout, identify any changes required and potential plant optimisation opportunities. As per the contract specification for the vessel, a helicopter deck with D-Value of 16 meters was to be arranged above the forecastle deck and helideck to meet the requirements of DNV (Class). DNV Rules for classification of ships Pt.6 Ch.1 Sec.2 E301 states, a fixed foam application system consisting of either monitors or pop up nozzles with minimum capacity of at least 6 l/m²/min shall have to be provided. The system must be able to cover the whole of the helicopter landing area and have sufficient foam medium to enable the foam application rate to be maintained for at least 5 minutes. A fixed foam application system consisting of pop-up nozzles and foam skid connects with a sea water supply assembly installed on-board the vessel as per the above CLASS requirements. As per the foam system design, there was a minimum flow requirement of 90 m³/hr of sea water and the pressure required at the foam skid was 8 bar.

Customer Profile

Cochin Shipyard Ltd MARINE BUILDING

Challenge -

To evaluate the operating performance of an existing pumped sea water fire fighting system serving a heli-deck, determine the plant limitations based on a revised system layout, identify any changes required and implement potential plant optimisation opportunities.

Solution -

Cochin engineers were able to use the software proficiently within one day allowing them to quickly predict the performance of the upgraded system whilst retaining the existing circulating pump. The engineers were also able to establish that the existing pump could be successfully re-used which avoided the need for an additional pump saving more time and revenue.

Benefits of using FluidFlow -

- Allowed the team to quickly model the system within time restrictions.
- Increased production.
- Helped the design team achieve considerable cost savings which had not been anticipated at the project outset due to perfect pre-modelling calculations.

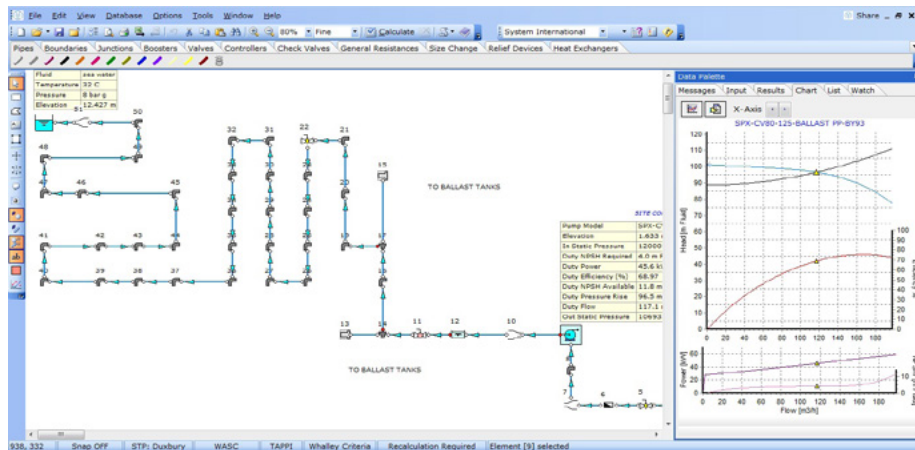


Figure 1: Fire Fighting System (Final Design).

The vessel had an existing ballast pump which was capable of 150 m³/hr at 9 bar. The team at Cochin Shipyard Ltd checked the suitability of the existing pump for this upgraded application using FluidFlow. The re-worked pipes and fittings were modelled together with pump performance data which was provided by the pump manufacturer. Figure 1 above provides an illustration of the overall system.

FluidFlow & Cochin Shipyard solution: By using FluidFlow, the team at Cochin Shipyard were able to predict the performance of the upgraded system whilst retaining the existing circulating pump. Engineers were able to establish that the existing pump could be successfully re-used, thus avoiding the need for an additional pump which was not anticipated during the project signing stage. This helped the team avoid further re-work to the existing plant which is installed in a constrained area. The design team achieved considerable cost savings which had not been anticipated at the project outset.

Testimonial: "We use the Liquid, Gas, Dynamic Analysis Scripting of FluidFlow and make extensive use of its simulation capabilities for engineering systems as cooling water, fuel oil, ventilation, etc. Before we bought we carried out extensive product research and chose FluidFlow because of its completeness and value for money. We have also received excellent support from the FluidFlow team. We have found the FluidFlow team to be extremely knowledgeable and helpful, really excellent." **Arun Kumar V-Machinery Design.**

About FluidFlow

FluidFlow is the software to design any pipe flow system. With FluidFlow, you can quickly design and analyze; incompressible, compressible, two-phase, non-Newtonian, settling slurry, pulp and paper pressure drop systems within one single package. Thermal analysis is also included with comprehensive databases. FluidFlow typically saves engineers 80% time vs Excel and 40% time vs competitor packages.



FluidFlow Headquarters
Toll Free: +1 888 711 3051
Telephone: +44 28 7127 9227
Fax: +44 28 7127 9806
Sales
inquiries@fluidflowinfo.com
Support
support@fluidflowinfo.com
Training
training@fluidflowinfo.com
Consulting
consulting@fluidflowinfo.com

