



AEMTC ventures into Advanced Instrumentation and Process Control System Training

Aims at making 'confident' marine engineers

— Seema Singh —

[Mumbai, 29 June]

The Anglo Eastern Maritime Training Centre (AEMTC) has taken a step forward in enhancing the qualities of their marine engineers; they have recently ventured into 'Advanced Instrumentation and Process Control System Training.' The new course will instil greater confidence in their sailing engineers when it comes to automation, control systems and various other onboard processes. In order to impart practical knowledge to those undergoing the course, the institute has designed an 'Advanced Process Instrumentation Trainer.' The system has been built and designed using in-house resources, after exclusive interaction with AEMTC faculty and after digesting feedback from Anglo Eastern's Technical Department.

The course was inaugurated by Mr Francis Akkara, Head of Engineering Studies, Anglo Eastern Group. In order to keep

pace with today's high quality automation and process control systems, AEMTC identified the need for educating their personnel in the latest technologies. Six marine engineers were handpicked by AEMTC for the first batch of the course. Anglo-Eastern has always led the way in starting new courses. "At AEMTC, this has always been the tradition, and it continues," said Mr Akkara.

The two-day course is designed for Chief Engineers, Second Engineers and senior Electrical Officers. It covers theoretical and practical aspects of various control systems, including Proportional, Integral and Derivatives. "The system will help our engineers and electro-technical staff to take steps forward from the basics of instrumentation to advanced levels in controls system and automation," added Mr Akkara.

Participants in the two-day course are taught to build circuits and

control loops on their own by using patch cords. They are also taught about the elements of calibration, ways to perform various tasks and the problems involved. "The candidates are given these circumstances to help them understand the consequences of an unstable system," Mr Akkara said, pointing out that the training was both theoretical and practical. "The practical session helps candidates learn ways to calibrate valves or E/P converters and to adjust PID controllers. The candidates are also taught about supervision through Human Machine Interfaces, a newer prospect on board that can be a challenge to troubleshoot," he added. AEMTC has made provisions for a 'Programmable Logic Controller'. This will make the 'Advanced Process Instrumentation Trainer' a complete hands-on training concept for marine engineers.

The training has proved to be well designed and successful. "The

course has made us knowledgeable and has given us the courage to operate the controllers and even to understand them in a better way," said David Flanagan, Chief Engineer, Anglo Eastern. Detailed information imparted on equipment has also proved fruitful. "During the two-day course, we were provided information on things that we might overlook while onboard," said Abhishek Sood, 2nd Engineer. The candidates were given situations where they were asked to find faults and make corrections. "Earlier we used to play around with parameters without much information. The course has helped in giving proper knowledge about many parts of the equipment," added Sood.

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Mr Francis Akkara talks about the advantages of the newly launched course



What prompted AEMTC to roll out this course?

Control engineering is one of the weak areas of expertise among present day marine engineers. Cargo monitoring and operation systems need to be carefully maintained in the highly automated engine rooms aboard ships today. Theoretical knowledge is needed to analyse and fix problems. The course aims at helping marine engineers gain theoretical knowledge as well as confidence in dealing with such automated equipment.

What is the need for a course of this type?

We want our ships to run more efficiently and to keep all the processes within good operating ranges as suggested by the makers. This makes it important to monitor all parameters and operate the system in an optimum manner.

As an example, processes like jacket cooling water systems, boiler systems and so on can be optimised only if we operate them well within allowable limits. This helps in protecting the owner's interests and in saving our planet by minimising wastage of energy. Secondly, a plant being operated too far from the set point can suffer progressive failures- which may include a cylinder liner crack, boiler damage etc. -which are expensive mistakes. In order to operate such automated systems efficiently, it is imperative to acquire good theoretical and practical knowledge.

How will the course help participants when they are on board?

One of the shortcomings noticed among marine engineers is a lack of confidence in handling any abnormal situations onboard, especially when it is associated with control systems. The training that we are imparting is a combination of theoretical knowledge coupled with practical training. We can also induce problems and faults in the trainer equipment so that candidates can be trained in achieving better ability to trouble shoot and fault find.

Why did AEMTC not purchase this state-of-art training equipment from the market?

There is no equipment available in the market that is suitable for such high value training. This equipment was developed after taking inputs from various experienced faculty of the Anglo Eastern Maritime Academy. It was important to match this equipment with the exact controlling equipment as is found on ships.

What is special about this Advanced Instrumentation Trainer?

The trainer has controlling equipment of the exact make that is extensively used onboard. AEMTC uses the latest equipment; this gives the engineers a better orientation for the time when they step aboard. We also introduce faults similar to the kinds that can pop up onboard during operation. This way, engineers are better trained and prepared to operate the equipment correctly and to deal with situations in a more organised manner.