

## Hydraulics Workshop

In view of the enormous use of hydraulic equipment and systems on board all types of vessels and the operation of such systems by Engineer Officers, it is imperative that they possess sufficient knowledge of the subject to enable them to operate these systems safely and efficiently.

Covering aspects of shipboard hydraulics, this workshop provides a forum for theory lecture delivery, PPT presentations, animation / videos and group discussions leading to improvement in competency and confidence in operating pneumatic equipment in a correct manner. Extensive exposure to hydraulic components and their application is provided along with several shipboard circuits being traced.



Program taught by  
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### Program Contents

- ✓ Introduction to, and advantages of, Hydraulics
- ✓ Fundamental Principles of Hydraulics.
- ✓ Symbolic representation of hydraulic components.
- ✓ Direction Control valves: Types of & actuation methods.
- ✓ Pressure Control valves: Types of Relief, Pressure reducing, Sequence, Counterbalance valve.
- ✓ Flow Control valves: Illustration of meter in, meter out & bleed off circuits.
- ✓ Applications of DCV's, PCV's and FCV's in hydraulic circuits.
- ✓ Hydraulic oil – functions & properties.
- ✓ Reservoirs – function & importance.
- ✓ Filters & contaminants, Filter efficiency rating, Contamination reporting standards.
- ✓ Pumps: Gear, Vane & piston types - variable displacement. Common problems with pumps. Introduction to Constant Pressure (Pr. Compensated) pumps.
- ✓ Illustration videos / animations for above valves and pumps.
- ✓ Hydraulic Circuit Diagram Reading - Reading & understanding some hydraulic circuits.
- ✓ Safety guidelines



Program Duration: 3 days

Conduction: Online on HELMS

Target Participants: Marine Engineers (all ranks) and ETOs