



South African Maritime Safety Authority

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Marine Notice No. 26 of 2013

Requirement for Motormen Grades 1 and 2 training courses.

TO SHIP OPERATORS, SEAFARERS, MARITIME TRAINING INSTITUTIONS, ENGINEER EXAMINERS AND PRINCIPAL OFFICERS

Summary

This Marine Notice serves to clarify the requirements for Marine Motorman Grade 1 and 2 training courses.

There appears to be confusion with the requirements for academic training for Motormen. The requirements are based on certain modules of the Engineer Officer of the Watch curriculum. This is in order to offer the candidate a seamless approach to attaining higher education and certification.

Due to the courses in the Code being at S1/S2 level the modules required for Grade 2 and Grade 1 should serve as an introduction to the module. The Grade 2 should be more basic than the Grade 1, together they should provide an introduction to the subject matter. Neither of these grades sit a written examination and candidates are assessed over the duration of the course with a level 2 oral at the end of the course. The level 3 evaluation will be assessed at SAMSA when the candidate applies for examination for his/her certificate of competency. This level 3 assessment will not be any more complicated than in the past and will use the attached guidelines.

For these two grades the first column of the table in the Code should be the guide. Bear in mind that a Grade 2 is for a vessel of < 350kW and the Grade 1 is for a vessel of < 750 kW.

The Engineering Knowledge course is required to teach the basics for these types of vessels and should provide a foundation for further study to attain a higher level of certification. This type of vessel does not have boilers and sophisticated purifiers, water makers etc. Also, maintenance is normally confined to changing the oil and filters. Major repairs are completed by shore persons. Bear in mind that the larger companies utilise Grade 1 and 2 motormen as “oilers/engine room hands”. The complete Engineering Knowledge (EK) course (which is equivalent to the Engineer Officer course modules) is taught at the Higher Grade level which has a written level 2 assessment.

The Naval Architecture is also just the basics, they should know the construction of their type of vessel and also have a rudimentary knowledge of free surface effect. As for the EK course this serves as a foundation for when the Higher Grade level 2 assessment is written.

The Ship Business is purely to give the candidate an insight into the requirements expected for very basic business and law. Some knowledge is required to prevent marine pollution and to assist with the skipper’s business requirements.

Emergency Procedures is introduced to improve safety.

The Workshop training is as per the Code with no exceptions. Modules are to be completed in full.

The level 2 assessment and training for Motorman Grade 1 and 2 should be based on the attached outcomes.

Any queries in this regard should be addressed to Chief Examiner or the Senior Engineer Examiner.

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OUTCOMES FOR THE MARINE MOTORMAN GRADE 2

Topics

Engineering Knowledge	
1	Describe engine room systems with the aid of sketches.
2	Names and functions of the main parts of propelling and auxiliary machinery.
3	Mechanisms of starting and reversing arrangements and maintaining operation of diesel engines.
4	Dealing with minor defects in propelling and auxiliary machinery.
5	Names and functions of the main parts of refrigeration machinery and working knowledge of refrigeration systems.
6	Elementary knowledge of hydraulics and pneumatics.
7	Taking over the watch and duties during the watch.
8	Elementary knowledge of electricity and electrical distribution systems, including protection devices on board ships.
9	Elementary knowledge of boiler operation and safety.
Safety	
10	Operations connected with the launching and practical handling of all survival craft and equipment on board and the principle of survival in such survival craft at sea.
11	Safe bunkering procedures.
12	The necessity of keeping bilges empty and clean and familiarity with bilge pumping systems.
13	Precautions to be taken prior to entry into any enclosed space.
Naval Architecture	
14	What is free surface effect and what are the dangers.
Business	
15	Introduction to business and MARPOL environmental protection.

OUTCOMES FOR THE MARINE MOTORMAN GRADE 1

Topics

Engineering Knowledge	
1	Production of electromotive force by chemical and magnetic means and electrical distribution systems.
2	Principles and working of motor propelling and auxiliary machinery including overhaul and repair work of a minor nature.
3	Starting, reversing and maintenance of motor propelling machinery including gearboxes and controllable pitch propellers.
4	Principles of 2 and 4 stroke engine cycles
5	Benefits of supercharging using mechanically and exhaust gas driven blowers.
6	Action of Thermometers, Pyrometers, pressure gauges, voltmeters and ammeters.
7	Temporary and permanent repairs in the event of a breakdown.
8	Bilge and fuel pumping systems
9	Steering gears, refrigerating, hydraulic and pneumatic machinery.
10	Properties of the various fuels and oil in use on board ship.
11	Boiler operation and safety. How to blow a gauge glass, check the burner and maintain water level.
Safety	
12	Precautions against fire and explosion from oil or gas and methods of dealing with an outbreak of fire.
Naval Architecture	
13	Basic requirements of ship stability including centre of gravity, stable, unstable and neutral equilibrium, the necessity of centre boards, compartments, watertight bulkheads and free surface effects of large volumes of water on trawl and factory decks, and precautions against flooding.
Business	
14	Elementary business and MARPOL environmental protection.