No:ENG/EXAM-11(1)/2004

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Dy. Chief Surveyor cum Sr.Dy.DG (Tech)	M.S. NOTICE No.7	Circular No.
	Issue No. 00	Dated: 22.05.07
Subject : Examination system for progression for sailors of Indian Navy/Coast Guard to MEO Certification (NCV)		

The purpose of this notice is to provide a stream for Sailors serving in Indian Navy to obtain Certificate of Competency under M.S. (STCW) Rules, 1998. Though the M.S. (STCW) Rules, 1998 have stipulated entry streams for technical sailors (Artificers and Mechanicians) into the merchant marine onboard Near Coastal Vessels, there is no stream facilitating lateral entry of Engineering Mechanics and **MECH 4 / ERA- 4.**

To facilitate seamless induction of the engineering sailors of the Indian Navy viz. Artificers, Mechanicians and Engineering Mechanics into the merchant fleet, post release from service, at levels matching their training, qualification and experience gained in the Indian Navy, the Chief Examiner of Engineers, Directorate General of Shipping, Mumbai has now considered educational qualifications, training and service of Artificers, Mechanicians and Engineering Mechanics who have served in Indian Navy and have decided to create a stream for such sailors for obtaining Certificate of Competency, which is described as follows:

1. **Minimum requirement for certification of Officer in Charge of an Engineering Watch Marine Engineer Officer Class IV(NCV) for vessels less than 3000 kW propulsion power and Offshore Supply Vessels less than 6000 kW propulsion power For sailors qualified as MECH 3 / ERA- 3**

As per Merchant Shipping (Standards of Training Certification and Watch keeping for Seafarers), Rules 1998, Flow Diagram No. 4 Stream 2N for MECH-3 / ERA-3, following has been revised considering the training imparted to such sailors in Indian Navy :

Sl. No.	Flow Diagram No. 4 of META Manual	Requirement for progression from MECH 3/ERA-3 to NCV Certification.
01.	MECH 3/ERA 3 from Indian Navy	To possess Diploma in Mechanical Engineering

	/Coast Guard	covering Marine Engineering aspects awarded by INS Shivaji, Lonavla with atleast 02 years sea service.
02.	3 months course covering A III/1 read with A I/3	Two weeks induction course duly approved by the Directorate to be conducted by NAMAC or any other approved Institute
03.	03 Advanced safety courses	03 Advanced safety courses
04.	06 months sea service with TAR Book	12 months of sea service on Indian Navy / Coast Guard vessels with TASK Book / Journal **(*)**
05.	Pass MEO Class IV (NCV) written & oral exam	Pass MEO Class IV (NCV) written & oral examination.
06.	12 months sea service	24 months of sea service on Indian Navy / Coast Guard vessels or 12 months sea service on sea going ships. (Merchant ships)
07.	04 months course covering Code A-III/3 as applicable for III/3 & I/3 of STCW-95	One month bridging course covering AIII/3 duly approved by the Directorate to be conducted by NAMAC or any other approved Institute **(**)**
08.	Pass MEO Class III (NCV) written & oral examination.	Pass MEO Class III Second Engineer (NCV) written & oral examination
09.	Progress as per Flow Diagram No. 4	Progress as per Flow Diagram No. 4

Notes

(*) Exempt for those ERA 3 / Mech 3 who have completed minimum 03 years of sea service.

(**) For the purpose of written examination Class IV (NCV), the sailors of the Indian Navy / Coast Guard are required to approach any of the DGS approved institutes for the purpose of examination along-with relevant testimonials. These institutes are required to conduct the exams and forward the results of respective Indian Navy / Coast Guard sailors to the office of the MMD for the purpose of conduct of orals exams for the MEO Class IV (NCV).

2. **Minimum requirement for certification of Officer in Charge of an Engineering Watch Marine Engineer Officer Class IV(NCV) for vessels less than 3000 kW propulsion power and Offshore Supply Vessels less than 6000 kW propulsion power- For sailors qualified as MECH- 4 / ERA- 4**

As per Merchant Shipping (Standards of Training Certification and Watch keeping For Seafarers), Rules 1998 Flow Diagram No. 4 Stream 2N for MECH 3 / ERA - 3 following has been exempted for sailors qualified as MECH -4 / ERA-4 considering the training imparted to such sailors in Indian Navy :

Sl. No.	Flow Diagram No. 4 of META Manual - in place of MECH-3 / ERA-3	Requirement for progression from MECH-4 / ERA-4 to NCV Certification
01.	MECH-4 / ERA-4 from Indian Navy / Coast Guard	To possess Diploma in Mechanical Engineering covering Marine Engineering aspects awarded by INS Shivaji, Lonavla with atleast 02 years sea service
02.	03 months course covering A III/1 read with A I/3	One month induction course duly approved by the Directorate to be conducted by NAMAC or any other approved Institute
03.	03 Advanced safety courses	03 Advanced safety courses
04.	06 months sea service with TAR book	12 months of sea service on Indian Navy / Coast Guard vessels with TASK Book / 06 months sea service on sea going ships (Merchant ships)
05.	Pass MEO Class IV (NCV) written & oral exam	Pass MEO Class IV (NCV) written & oral exam
06.	12 months sea service	24 months of sea service on Indian Navy / Coast Guard vessels / 12 months sea service on sea going ships (Merchant ships)
07.	04 months course covering Code A-III/3 as applicable for III/3 & I/3 of STCW-95	One month bridging course covering AIII/3 duly approved by the Directorate to be conducted by NAMAC or any other approved Institute.
08.	Pass MEO Class III (NCV) written & oral exam	Pass MEO Class III Second Engineer (NCV) written & oral examination.
09	Progress as per Flow Diagram No.4	Progress as per Flow Diagram No.4

Notes

For the purpose of written exam of MEO Class IV (NCV), the sailors of the Indian Navy / Coast Guard are required to approach any of the DGS approved institutes for the purpose of examination along-with relevant testimonials. These institutes are required to conduct the examination and forward the results of

respective Indian Navy / Coast Guard sailors to the office of the MMD for the purpose of conduct of orals examination for the MEO Class IV (NCV).

3. **Minimum requirement for certification of Officer in Charge of an Engineering Watch Marine Engineer Officer Class IV(NCV) for vessels less than 3000 kW propulsion power and Offshore Supply Vessels less than 6000 kW propulsion power - For sailors qualified as Engineering Mechanics.**

As per Merchant Shipping (Standards of Training Certification and Watch keeping For Seafarers), Rules 1998 Flow Diagram No. 4 Stream 1N for Engine room rating with watch keeping certificate, following has been considered for **Engineering Mechanics** considering the training imparted to such sailors in Indian Navy :

Sl. No	Flow Diagram No. 4 of META Manual Stream 1N	Requirement for progression from Engineering Mechanics to NCV Certification
01.	Engine Room rating (REW) with 03 months course and 06/09 months onboard training including RTRB	Engineering Mechanics with Auxiliary Watchkeeping Certificate with 2 years of sea service. To be issued with Rating Watchkeeping Certificate by the Directorate.
02.	02 years sea service on sea going vessels	04 years sea service on Indian Navy / Coast Guard vessels / 02 years sea service on sea going ships (Merchant ships)
03.	03 months course covering Code A-III/1 read with A-I/3 of STCW-95	03 months Directorate approved Pre Sea Rating course covering Code A-III/1 read with A-I/3 of STCW-95, conducted by NAMAC or any other DGS approved Institute
04.	03 Advanced safety courses	03 Advanced safety training courses
05.	06 months sea service with TAR book	06 months sea service with TAR book on sea going ships (Merchant ships)
06.	Pass MEO Class IV (NCV) written & oral exam	Pass MEO Class IV (NCV) written & oral examination
07.	Progress as per Flow Diagram No.4	Progress as per Flow Diagram No.4

Notes

For the purpose of written exam of MEO Class IV (NCV), the sailors of the Indian Navy / Coast Guard are required to approach any of the DGS approved institutes for the purpose of examination along-with relevant testimonials. These institutes are required to conduct the exams and forward the results of respective Indian Navy / Coast Guard sailors to the office of the MMD for the purpose of conduct of orals exams for the MEO Class IV (NCV).

Sd/-
(D.Mehrotra)
Dy. Chief Surveyor cum Sr.DDG(Tech)

Encl: Annex I, II & III

Annexure 1

Course Module : Induction Course (Two weeks)
Syllabus for Mech 3 / ERA 3 for progression to MEO Class IV (NCV) Certification
Ref : M.S. Notice No. 7 Para 1 Sr.No.2

Duration : 12 working days

Contact hours : 84 hours including interaction with participants

SL.NO.	SUBJECT	DURATION
01	**Marine Environment Protection** - Pollution prevention, basic knowledge of prevention of marine environment pollution, anti pollution procedures - Effects of operational / accidental pollution on marine environment - Familiarity with all Annexes of MARPOL 73-78 - Anti pollution equipment & drills - Familiarity to SOPEP manuals & oil record books - Working principles of Oily Bilge Water Separators, incinerators and	35 hours

	Sewage Treatment Plants	
02	**Legislation with regard to** - Basic working knowledge of IMO - Regulations / Conventions SOLAS, MARPOL, Load Line STCW and ISM - Statutory Certificates	14 hours
03	**Ship Safety & Personal Care** - Safe Working Practices - Knowledge of medical first aid at sea - Knowledge of life saving appliances used on ships upto 3000 kW	21 hours
04	**Introduction to Tankers** - Tanker terminology, Oil tanker types - Hydrocarbon structure, physical properties - Oil tanker arrangements, piping arrangements, draining/stripping cargo level measurements, tank cleaning, purging & ballast voyage - Hazard control measures & personnel protections	14 hours

Annexure 2

Course Module : Bridging Course (One month)

Syllabus for Mech 4 / ERA 4 / Mech 3 / ERA 3 for progression to MEO Class IV (NCV) Certification

Ref : M.S. Notice No. 7 Para 1 Sr.No.7 & Para 2 Sr.No.7

Duration : 26 working days

Contact hours : 182 hours including interaction with participants

SL.NO.	SUBJECT	DURATION
01	**Marine Environment Protection** - Knowledge of MS rules including record keeping - Thorough knowledge of pollution prevention procedures - Garbage management plan, Air pollution prevention	14 hours
02	**Health** - Crew accommodation, hygiene, welfare of crew, inspection & reports, Maritime declaration of health, Port health requirements pertaining to BIMMS conference	14 hours
03	**Safety** - Outline knowledge of acts & regulations affecting ship management including drills, musters, operation of live saving equipment, closing of hatches and bulkheads	14 hours
04	**Basic knowledge of ISM Code** - Emergency plans for collision, loss of steering, ship aground, oil spills, flooding - Organising training onboard	14 hours
05	**Certificates** - Documents to be carried by the ship, validity & procedures to obtain	07 hours
06	**Load lines & SOLAS** - Responsibilities for loadline marks, entries of reports / records on draught allowance	14 hours

	- Knowledge of International convention on SOLAS	
07	Ship stabilitry - Determine Centre of Gravity in new condition - Effects of adding / removing weights - Computation of areas of volume by Simpsons First & Second rules - Use of hydrostatic curves of ship stability, carriage of deck cargo, factors affecting shape of data curves, concept of permeability - Calculation of change of trim, moment to change trim per centimeter, position of centre of floatation	77 hours
08	Ship Construction - Knowledge of writing damage report sustained in voyage - Knowledge of classification of ships & classification society - Stress & Strain on ships in seaway due to loading & ballasting - Local & special stiffening	14 hours
09	Knowledge of all types of life rafts, life jackets, life buoys, pyrotechnics, thermal immersion suits and their maintenance	14 hours
	TOTAL	**182 hours**

Annexure 3

Course Module : Induction Course (One month)

Syllabus for Mech 4 / ERA 4 for progression to MEO Class IV (NCV) Certification

Ref : M.S. Notice No. 7 Para 2 Sr.No.2

Duration : 26 working days

Contact hours : 182 hours including interaction with participants

SL.NO.	SUBJECT	DURATION
01	**Marine Environment Protection** - Pollution prevention, basic knowledge of prevention of marine environment pollution, anti pollution procedures - Effects of operational / accidental pollution on marine environment - Familiarity with all Annexes of MARPOL 73/78 - Anti pollution equipments & drills - Familiarity to SOPEP manuals & oil record books - Working principles of Oily Bilge Water Separators, incinerators and Sewage Treatment Plants	35 hours
02	**Legislation with regard to Pollution prevention** - Basic working knowledge of IMO - Regulations / Conventions SOLAS, MARPOL, Load line & STCW - Statutory Certificates	28 hours
03	**Ship Safety & Personal Care** - Safe Working Practices - Knowledge of medical first aid at sea - Knowledge of life saving appliances used on ships upto 3000 kW	14 hours
04	**Introduction to Tankers** - Tanker terminology, Oil tanker types - Hydrocarbon structure, physical properties	28 hours

	- Oil tanker arrangements, piping arrangements, draining/stripping cargo level measurements, tank cleaning, purging & ballast voyage - Hazard control measures & personnel protections	
05	<u>Naval Architecture & Ship stabilitry</u> - Density, Relative Density, d, TPC, Coefficient of form, calculation of area, volume & moments, block coefficient. - Terms of buoyancy and reserve buoyancy - General understanding of centre of gravity, centre of buoyancy, meta-centric height, righting lever, righting moment, stable, neutral and unstable equilibrium - Stiff & Tender ship, use of hydrostatic data - Effects of adding / removing weights	49 hours
06	<u>Ship Construction</u> - Definitions of sheer, camber, flair, rake, tumblehome & rise of floors. Sections used in welding & materials. Longitudinal & transverse framing, beam knees, watertight bulkheads, hatches, rudders, bow thrusters, propellers, watertight bulkheads, double bottoms, shell & deck platings. - Fore & aft peak tanks, double bottom and deep tank filling and pumping arrangements, compartmental drainage, bilge keel. - Panting, hogging, sagging, pounding, permissible stress limits - Side & wing tanks, air pipes, ventilators	28 hours